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E d i t o r i a l

IT DOES not pay, these days, to be man or mosquito. Science seemingly has it in for both species.

Man, of course, is perhaps more used to threats of scientific doom. At least, he has been on the receiving end longer. This time, however, the shadow looms longer and more sweeping, for word is being bruited about that the death ray—that's right, the good ol' death ray—is with us once again.

It goes without saying that the death ray has long been on the National Inventors' Council's list of "most-wanted" devices. And for just about as long—perhaps a bit longer—it has been a standby of not-so-well-written science-fiction.

Recently the nation's press speculated that a real death ray might be on the verge of reality. The House Space and Aeronautics Committee was holding closed hearings in Washington. Naturally, since the hearings were closed, it took a few moments longer for the news to get out. A Texas company, the word went, was ready to deliver a ray-machine that would melt an airplane 1,000 miles away.

The denials came thick and fast. But along with the denials came bits and pieces of equally as interesting information. The ray, it was said, was only "in the process of development," and it wouldn't melt an airplane; it would just louse up its engines and navigational devices.

If mankind's doom is to come about by death rays, the mosquito's doom is at least based on something more interesting. You guessed it: sex.

With insects now thumbing their antennae at DDT and the more potent insecticides, Dept. of Agriculture entomologists are experimenting with the technique of sterilizing male mosquitoes by exposure to a cobalt-60 bomb, and then letting them loose in mosquito-infested areas. The female mosquito cannot tell the difference. "Sterile males, a department spokesman said, "compete successfully with normal ones. The average result is that 70% of the eggs laid are sterile and won't hatch."

Maybe we won't need that death ray for man after all.—NL

... AND ALL THE STARS A STAGE

By JAMES BLISH

ILLUSTRATOR FINLAY

*This novel will be published in the
fall by Signet Books under the title
"Crab Nebula."*

CHAPTER 1

IT HAD all begun, Jorn Birn thought dispiritedly, with the exploding star.

The thought did not cheer him much. It is a hard thing to have to blame one's troubles upon an event which took place three hundred years ago, particularly when one's troubles are present, immediate, and full of nagging little details which seem to have nothing to do with history at all—let alone with so remote a subject as astronomy.

Take for example the present instance. Given, to begin with, a young bachelor sitting alone





in his government-allotted room in an all-male "residence conclave"—the government's totally transparent euphemism for a barracks or dormitory, combining only the grimmer features of each. Given, secondly, the morning television newscast, with its usual quota of stories which seemed to differ from day to day but actually were always the same: the swearing-in of the first World Legislature to be composed entirely of women delegates; the failure (again) to meet the year's food production quota, despite the most intensive, back-breaking exploitations of hydroponics, undersea farming, cloud culture, desert irrigation, deep-tank mass cell culture and half a dozen other techniques the names of which conveyed absolutely nothing to Jorn; the successful landing of a robot-probe expedition on the tiny, sun-baked, and intransigently useless planet nearest the Sun, whose name fled out of Jorn's head as slipperily as it had skidded in on the oil of the newscaster's voice; the verdict in a sensational trial involving a minor government functionary who had brought a paternity suit against someone in her official *familias*—sensational only in that the usually conclusive blood tests having failed for some complicated genetic reason, she seemed to want to *establish* paternity, rather than to disavow it and thus take the child into her own crèche (and two

seconds after he had heard the verdict, Jorn could not remember whether she had won or lost, and could think of no reason why he should care).

And given, finally, the spectacle of an unusually intelligent young man, still almost fully in possession of the standard engineer's education of his time, desperately sitting through this barrage of unchangingly insignificant news stories, as daily and as interchangeable as a dish of cat-meat, in the sole hope of hearing something which might lead him to a job. Of course a television newscast is a wholly inappropriate medium in which to run a Help Wanted column, since the listener cannot decide whether or not he is interested in a given bid until he has heard it all, by which time it is too late for him to write down the address and the telephone number and such other details as he may need to study or to carry out onto the belt-ways with him. Employers who were really seriously in search of skilled help invariably still resorted to the newspapers, and in the very rare cases where they also inserted a television appeal, they took it for granted that anyone in whom they were likely to be interested would be making a telefax transcript of the entire job-openings announcement. This was nonsensical, since nobody but an unmarried male would be des-

perate enough to hope to locate a job through these television announcements in the first place, and the sets in the residence conclave rooms did not include telefax equipment; it was of course true that the set in the recreation hall had a telefax attachment, but no bachelor in his right mind could hope to compete with two hundred others for that single sheet of blurrily printed brown paper, which even when new looked as though it had been rescued almost too late from a fire, and still have any time left over for tracking down the very few jobs it announced. If you had hoped to have a hearing at all, you had to hop, the moment you got the word. You couldn't afford to waste time hanging around the orifice of a community telefax, until it should choose—as it did only once an hour—to protrude the long sickly brown tongue of its transcript.

All this was difficult enough to blame upon a star that had exploded three hundred years ago; but in view of the persistent triviality of the news, and the high unlikelihood that the job-opportunities commercial could offer anything whatsoever worth pounding the belt-ways to get, Jorn managed. In a world in which hardly anything satisfied him, it was easy enough to wonder how today might have differed from itself if history could somehow have

been re-arranged; and the exploding star was a natural beginning to such a daydream, since before that event nothing, really, could be said to have happened at all.

Oh, there had been the usual wars, the usual pestilences, the usual migrations, the usual births and declines of nations, but the details of daily life for the ordinary human being hardly changed from age to age. The industrial revolution, of course, overturned all that; in the short course of slightly more than a century, the average citizen of the wealthier countries found himself in possession of riches beyond even the dreams of kings of any earlier time; but even that great event was dwarfed by the supernova. In fact, if Jorn remembered correctly, the industrial revolution had been still in progress when the star exploded, though how far along it had progressed he could not be sure—his historical daydreams being more than a little impeded by the fact that history had always been his weakest subject; the might-have-beens kept getting mixed up with the facts.

In any event, when that mighty star rose in the night, everything was changed. For a week it grew brighter and brighter, until it far outshone any other object in the sky but the sun. At the peak of its 55-day life, it was clearly visible in the daytime, a spearpoint of

light too intense to be looked at directly. At night, it cast distinct shadows and indeed was more than bright enough to read by, so that for a little while the night as everyone had known it in all the centuries before was effectively abolished.

Thereafter it waned, slowly. It was still there, and could still be seen by the naked eye if one knew where to look: a dim, ghostly blob of light, like a flower in a medieval field of uncut grass, of about the eighth magnitude. Through the telescope it was a spreading, crawling cloud of incandescent gas something under two light years in diameter, vaguely crablike in shape, still expanding in the sky at the rate of about four angular seconds per year. Its apparent diameter was already so great that a half-credit coin held at arm's length would not quite cover it, although of course the nebula itself was quite invisible to the naked eye. There was still a star in its heart, but it was a shrunken corpse now, well on its way toward becoming a white dwarf.

But the naked eye had not been the only observer even then. By an amazing stroke of luck—bad luck, in Jorn's soured view—one of history's greatest astronomical theorists had been watching it, through one of history's first really efficient large electronically amplified telescopes, at the instant it had

exploded. Since it proved to be located in a thin dust cloud, undetected until then, the expanding globe of light racing outward from its first brightening afforded a direct visual check of the speed of light, in the vastest laboratory imaginable; while successive spectrographs of the entire cataclysm unveiled the secrets of not just one, but a whole series of nuclear reactions, several of which proved to be duplicatable—with considerable effort—on a controllable scale. The Age of Power had arrived, borne upon starlight.

A head poked around the door into Jorn's ruminations.

"Got the news on?" it said. "Who's ahead?"

It was Jurg Wester, a fellow resident; Jorn was not particularly fond of him, but a prudent man did not invite animosity in quarters as close and lacking in privacy as a conclave. Today he was looking unusually seedy; his state-issue suit looked as though it might have been slept in. But then, they all got to looking like that after a while; the fabric wrinkled readily and getting the wrinkles pressed out was too expensive for a bachelor to undertake very often—too expensive, and mostly too purposeless.

"The women, who else?" Jorn said. "Sit down and shut up a minute, Jurg. I want to hear this."

"You want a job shoveling garbage?" Jurg said, but he subsided after that accommodating-

ly enough, his eyes slowly glazing as he watched the screen. Jorn, only a little distracted, did not find it difficult to recapture the skein of his musings.

For the Age of Woman had indeed followed almost directly upon the Age of Power, though nobody had accurately foreseen it at the time. Probably such a prophet, had he existed, would not have been heeded anyhow. The relevant technique was called sperm electrophoresis, a ridiculously simple trick to perform in glassware—and the pharmaceutical manufacturers had quickly come up with a medium, an anion or cation exchange gel, which made it equally easy to perform *in situ*. Its purpose was sex determination of the child at conception.

By hindsight, Jorn thought gloomily, it ought to have been realized that the first several generations to have the trick made available to them would respond by "starting with a boy." That preference had already existed, and indeed was so primitive that it might possibly be instinctual. The result, in any event, was the world of today, heavily overburdened with males, most of them useless—at least in the sense that neither the economy nor the society could find places for most of them.

Being a man, Jorn was inclined to think that the real death blow had been struck by the release of Selektrojel to the populace as an over-the-counter or non-prescription item. Pos-

sibly if its use had been restricted to couples psychiatrically certified to need a baby of a given sex—like, say, a couple to whom unaided nature had given only a string of five daughters, or, no, better make it nine . . . But that would not have worked either. The demand for the stuff had been far too great. Like alcohol, the trade in it could be regulated more or less effectively, but it could never be restricted in any meaningful sense.

All the same, Jorn was aware of his prejudices, and it was clear enough to him that radical changes in the social mores had been in the making even back then. Had it not been Selektrojel, it would have been something else. That had appeared almost simultaneously with another dangerous triumph of the pharmaceutical research laboratories: a cheap, simple, safe, foolproof oral contraceptive. This, coupled with the fact that venereal disease had disappeared (as a natural consequence of the virtually complete conquest of infectious disease by chemotherapy, immunology, and universal sanitation), might easily have destroyed the immemorial family system entirely, by making sexual relations so free of any unwanted consequence that they could hardly seem worth the price of a lifetime contract, especially to the innately roving-eyed male. ("In fact," one of the leading doctors of the time had remarked in an immortal burst

of unconscious humor, "venereal disease is now almost as pleasant to cure as it is to catch.") Legal protection could still be afforded the woman afflicted with an accident of impulse, since modern genetics made it possible to determine the parents of any child ninety-nine times out of a hundred by blood tests alone.

That much *had* been predicted, by one of the most brilliant novelists of the period; but it had not worked out that way—not entirely—and for this Jorn had reluctantly to give the credit to Selektrojel. Sexual customs were indeed immensely less constrained now than they had been in the times of Jorn's grandparents, but the family had not been shattered. Being able to choose the sex of their children had given people enough of a stake in the family system to turn the tide in favor of retaining it. To be sure, the present prevalence of harems of male concubines, and the way women officeholders had of recruiting male staffs by marrying them—that was not yet official, but it would become so on the inevitable day when the first woman World Director was elected and chose her cabinet that way—would have stunned and revolted Jorn's grandparents, but it *was* still recognizably a family system . . .

. . . Which did Jorn Birn no good whatsoever. The fourth boy in his family—which, since his mother had been moderately well

off, had provided him with three people to call "father"—he had been farmed out to a crèche not long after infancy, as a luxury his mother had decided she could no longer afford. He had been state-raised, state-educated, and state-supported ever since. Nor did he have any hope of marrying into some influential woman's staff, or indeed much hope of marrying at all; though he had never heard of Cinderella, he recognized the standard plot of the usual television drama for the opiate it was.

Engineering or no engineering, it sometimes seemed to him in his worst moments that he had no prospects but those of becoming a public gigolo. But he was invariably brought up short by the realization that he was not really attractive enough to make a living at it against the widespread competition; and in any event, his powers in this field were at the age of twenty-five not only unpracticed, but outright untested. Jorn Birn was simply a glut on the market, any market, and that was the end of the matter.

"And winds from the northeast, moderate to fresh," the newscaster was saying brightly. "And now, let's see what's stirring in the way of job opportunities. We have an unusual item to lead off with. And there's no use listening to *this* one, girls, because it's for a *man*." There was an apprecia-

tive giggle. "Here's an outfit that says it wants a *young male* with technical training. It won't pay him much and he'll have to work long hours in all kinds of uncomfortable and dangerous situations. 'Death not unlikely,' it says here, 'but survivors *may* become famous.' Well, *well*. The address is room a-ten-prime, Research Tower, Central City. Here's a *big* chance, fellows—be the first man in history to circumnavigate the sun on skis, or something! And now, let's get down to *serious* business. Continental Atomics informs your communicator that it *urgently* needs five young women, in the twenty-to-forty age bracket, to administer a new power-conversion project. Although previous experience *is* preferred, the firm—"

Convulsively, Jorn switched the set off. That was that.

"But why'd you bother to write the address down?" Jurg said immediately. Jorn was startled; somehow, he had assumed that the other man had fallen asleep with his eyes open. "It's all klax anyhow, you ought to know that."

"I don't know. I do it by habit. And a good thing this time—she was so busy being funny, she forgot to repeat it."

"Klax," Jurg said firmly, and ran his index finger under his nose. "If that job's a good thing, I'm a town clock with sixteen chimes. The witch was right—it's a recruiting poster for one of those space medicine slaugh-

terhouses. They'll squirt you off to an orbit a thousand miles out from nothing at all, record your blood pressure and a little muffled cussing by radio—and then, when they somehow don't manage to bring you back, they'll shed a tear and scratch your name onto some imperishable back fence with a blunt nail."

Jorn grinned in spite of himself. Jurg undoubtedly had hit the target pretty close to dead center: that item *had* had all the ring of a lure for some kind of space travel experiment, which was already no more than a nearly-standard way for a young man in despair to commit suicide . . . especially since the money involved, even if you did survive, was invariably less than the residence-conclave dole.

And yet, and yet . . . perhaps only because he had been observed writing the address down, perhaps only because he a little bit disliked Jurg's habitual air of knowing all the answers in advance, he felt himself turning stubborn.

"Maybe so," he said slowly. "But I've heard a lot of those ads. She said, 'Survivors may become famous'—I can't remember ever having heard that hook before, except when I was a little boy. It certainly doesn't sound like the lunar colony project, just to begin with."

"No," Jurg agreed, "there's too many people settled on that rock-ball already. It's just the usual guinea-piggery—a satel-

lite, or maybe an interplanetary probe: tell us what you can see, old man, until we can't hear you any more, and then s-t-r-e-t-c-h that last can of cream-of-fungus-mycelium soup. Besides, why do you want to be famous, anyhow?"

"I don't, exactly," Jorn said, irritated. "But if it meant what it said . . . well, fame is negotiable, if you handle it right."

"How do you do that? By marrying the next World Director?"

"No. For that I'd have to be lovable, too—all the video shows tell you that, don't they? But being famous *might* help. A lot of women these days think a little about good genes before they decide who they're going to marry next. If you weren't born of a rich mother, or one with political connections, it couldn't hurt to have something else conspicuous in your record—something that shows that you're pretty good in your own right."

"Dream on," Jurg said. "That's how they got us in this trap in the first place, and that's just how they mean to keep us there. We aren't ever going to get out of it by swallowing their little myths down whole, I'll tell you that much."

"Well, tell me some more while you're on the platform. How *are* we going to get out of it?"

"The time will come," Jurg said, a little portentously, scratching under one armpit. "I

don't think you're really ripe for it yet, Birn. But you'll come around to it on your own before long; I know the type. I just hope it isn't too late by then."

"Suit yourself," Jorn said shortly. He had heard nonsense like that before, often enough to know approximately what it was supposed to mean. He looked at the address again, and then at his two-credit state-issue watch. What harm could it do to follow the item up? After all, he had nothing else meaningful to do. His choices were restricted to listening to Jurg become more and more cryptic, throwing Jurg out and watching the next episode of "Pat's Other Jon," or sitting in a park surreptitiously chucking gravel at the birds. A choice between another day of despair . . . and room a-10 = prime, Research Tower, Central City.

"Excuse me," he said. "I think I'm going for a walk."

It was high summer at its worst outside. The massive blue-white supergiant sun, an undulating variable with more than a hundred different overlapping periods, was at one of its thousands of possible peaks of three or more cycles. It turned the air into an invisible cauldron, which might at any moment boil up into a storm, very possibly one too violent for Weather Control to cope with—there had been an increasing number of those in the last few years.

Nevertheless, Jorn elected to

take the beltways. He was lucky enough to be in Central City to begin with; but also, he had bought three books this month, which had nearly wiped out his carfare budget.

The sensed threshold of violence in the weather forced his thoughts reluctantly back to Jurg Wester, and the vague rumors of revolution which Jurg had been attempting to float. Jorn had heard them before, and not always from Jurg; they came drifting through the residence conclaves as ominously and unpredictably as thunderheads. It was a minor cross to Jorn that he was still unable to take much stock in them.

He had, to be sure, every reason to believe that the vast sexual proletariat of the bachelors was bored and desperate enough to welcome almost any imaginable kind of trouble. It was not hard to suspect, too, that the husbands and concubines were just as unreconciled to the role of belonging to the inferior sex. Anyone seriously examining the change which had come over the statistics of crime in the last two generations would draw very much the same conclusion.

All the same, he could not bring himself to hope that any open conflict between the sexes—as opposed to the natural, buried, and eternal conflict—could end by changing society more than slightly. You could of course change human nature, since in the long run that meant nothing more than changing hu-

man behavior; that had been done over and over again, quite often by design. But the one thing you could not change was human needs. In any formal war between the sexes, the defections from both sides would in the end wipe out even the possibility that either side could win, exactly as an ancient play Jori had been forced to read at school had devoted five acts to insisting.

Damn Jurg Wester; but still, it was a nice notion to daydream about on an afternoon of incipient thunder. At least it helped Jorn to ignore the fact that he was hopelessly stumping the beltways again, the pockets of his SI suit without enough credits in them to clink against each other.

The beltways were depressingly well populated with men of all ages. Those who looked to be about Jorn's age or younger were dressed in a wild variety of styles. Though the SI suit was predictably in the majority, even that was often modified enough to accommodate the one mandatory feature of all the current styles, an outlandishly stuffed and padded codpiece. Where the men involved had the money for it, the suits were replaced entirely by shadow-cloaks—fundamentally a cross between a tailored toga and a front-split kilt. This was made of a synthetic fabric which took permanent creases almost as well as paper did, and hence could be

folded and pleated by its owner to his own taste, so that in motion it afforded frequent but not quite predictable glimpses of whatever good points he thought he had. Here and there, too, Jorn saw a man in the highly conservative "business" coverall which was this year's uniform for the prosperous homosexual, a far more powerful class among career women than any of the normals were; these he eyed with a malice he knew to be at least half envy, for he had long ago determined that he had been born without the talent. All in all, his sex was a colorful aggregate; and all in all, they made him want to spit.

A male revolution? No, Jurg was wrong; it wasn't likely. There were already too many different kinds of males in the world, all intent upon maintaining their differentness, and if possible, parlaying it into the unique. They had suffered themselves to be divided—and from now on, they would be ruled.

CHAPTER 2

ROOM a-10-prime, Research Tower, Central City, was an absolute madhouse.

It consisted primarily of a huge waiting room, almost as big as a hall, most of which was fenced off from the milling applicants. The fenced-in area was occupied by closely spaced desks where interviews were conducted, or dictation given to standard government vocoders.

Outside the fence there was an oblong of floor mostly taken up by massed ranks of folding wooden chairs, like fugitives from a funeral. Here the applicants sat waiting their turns to stand at one of the writing banquettes along the wall and fill out a limp, gray legal-length questionnaire which offered not a single clue to what the victim was applying for.

Those who got past the first screening at the desk by the gate, as Jorn eventually did, were transferred to an interviewer; and if the interviewer was satisfied—though "satisfied" was hardly the word, for the young women who did the work somehow managed to look as sour upon finding someone they could pass as they did when (far more usually) they sent the applicant ignominiously out—the legal-length form was promptly reduced to a series of punches in three stiff colored cards. The floor around the interviewing desks was drifted over by the little red, yellow and blue checks which had snowed down from the busily snipping punches; they were also all over the tops of the desks and even on the seats of the chairs. They clung to the hair, settled into the creases of the SI suits, became airborne at whim and floated up the nose, and every so often, immediately following an explosive sneeze, went flying in all directions toward the ceiling like chaff through a silo. When this happened, the young wom-

an interviewing the hapless sneezer usually changed her expression from routine disapproval to implacable grimness and sent him packing, dropping his cards into the waste-can.

Jorn somehow managed to pass this test, though still without learning anything at all about the job. He was sent back to the ranked folding chairs to wait while his cards were processed, with an enormous roar which made all talk in the room impossible except at a driving shout, by a computer which seemed to be not so much analyzing the cards as chopping them completely into more varicolored little checks. After more than an hour, during which the heat reduced Jorn's SI suit to an assemblage of clinging dish-rags and the folding chair became increasingly impossible to sit on comfortably regardless of how he tried to accommodate himself to it, one of the young women took a red card out of the stack in the computer's return basket, stared at it with astonished disapproval, and came to the rail to call Jorn's name. Simple though it was, she had no difficulty in mispronouncing it; obviously, she had had practice.

He was directed off the floor into a room not much bigger than a closet, but which at least seemed to be air-conditioned. Here a middle-aged woman doctor asked him another hundred questions, these of such astonishing intimacy that he did not

himself know the answers to nearly half of them. This, for some reason, seemed to satisfy her profoundly; he was told to step into the next room and take off all his clothes. Since the heat in the waiting room had long since converted the suit into a clammy, slowly disintegrating shroud, he was a little reluctant to do so, out of the conviction that he would never get it on again in one piece. Nevertheless he complied.

The disrobing awoke Tabath, his familiar, who raised her tiny crested head from his wrist to stare with unwinking yellow-eyed hostility at the glare and confusion. Though both glare and confusion were commonplace enough at the residence conclave, no one really yet knew how much the little basilisks learned from experience, even after nearly a century of studying them. Jorn was personally quite convinced that Tabath was unusually intelligent for a familiar, but he had the saving good sense to know that everyone thought well of their own—that bias was absolutely necessary in so personal a relationship, but that did not make it necessarily true.

The serpent shifted her two-foot length on his arm automatically and looked back up at Jorn. As usual, he had no idea what she wanted—as an ectoparasite she had no wants she needed to ask for—but the movement had the effect of making him notice that none of the naked men in

the long line he was supposed to join was wearing a familiar.

As he hesitated, he heard behind him the clack-clack of sandals, and turned to see another woman doctor in the act of passing him. She was exceedingly striking, and somehow Jorn had the impression that he knew her. She was grey-haired, obviously old enough to be his grandmother, and yet at the same time quite beautiful—not with the hard gloss of the television actress, nor even that of the older woman fighting grimly to hold onto her looks, but with a soft feminine warmth which was as captivating as it was rare.

She stopped, apparently noticing his hesitation, and smiled at him quizzically.

"Don't worry," she said. "Just leave her with your clothes. She won't wander off and no one will bother her. You may have a *very* complete physical exam ahead of you, and we can't take the chance that she might misinterpret it."

That seemed logical enough. Jorn had never had an intensive physical before, and Tabath had been known to take even cursory ones as having aggressive intent. He began to stammer out his thanks, but the doctor had already smiled again and moved on. As he stared after her, he realized why it was that he had thought he knew her: She was Dr. Hary't Chase-Huebner, one of the world's foremost authorities in cancer research. He had

seen her most recently on television only a month ago, in a newscast of the awarding of a government-sponsored prize.

Her presence here was convincing evidence that the job, whatever else it might prove to be, could hardly be what Jurg Wester had called "just the usual guinea-piggery"; but that was not the aspect of the encounter which impressed Jorn most. Instead, he was bemused to find that with a smile and a few words the scientist had cut right through his ritual dislike of women-in-general. In her own person she was a gentle but forcible reminder that women, like men, came in all colors of the personal spectrum: some bad, most indifferent, a few undeniably good. He found himself wondering how many husbands she had, and how much of her family she had kept with her past puberty; he remembered vaguely that she had a son—a son, no less!—who was an eminent physicist in his own right, with whom she occasionally collaborated on research problems which involved both sciences.

He sighed without being aware of it and stripped Tabath off his forearm. She promptly coiled fiercely around his hand, but by saying "Shower, Tabath" to her four or five times with increasing firmness, he managed to overcome her suspicions of the strange surroundings. Nevertheless, she promptly disappeared into one of his pockets; ordinarily she would have coiled inside

his collar, where she could keep watch until he reappeared.

The first physical was relatively superficial, strictly an assembly-line procedure. Once past it, however, Jorn found himself subject to an individual examination which more than justified Dr. Chase-Huebner's prophecy. He had never realized before that he had so many orifices worth looking into, so many internal organs to be palpated and X-rayed, so many body products worth sampling, so many vital processes recordable by appropriate machines. Had Tabath been present through all of this, she would indeed probably have bitten somebody—or, more likely everybody. Even for Jorn it was something of an ordeal; when it was over, he felt as though he had just run a mile. (And he had in fact run about a quarter of that distance, on a treadmill, with a breathing mask over his nose and mouth.)

By this time he was deep into the labyrinth which was "room" a-prime-10, and had entirely lost sight and track of other applicants for the job, if indeed any other than himself had been allowed to penetrate this far. It had become wholly a private trial, in which he moved entirely alone through a strange universe where a new dragon lurked in every cave, unarmored, disarmed and without even a familiar to share his defiance.

After the physical he was given a break for lunch. It was

a better meal than he had been able to buy for himself at any time in his life, but his appreciation of it was somewhat dimmed by the company he was forced to eat it in—three specialists of some kind, one of them male and decidedly subordinate to the other two, who probed insistently for his opinions and his stores of information on a wide variety of subjects. So many of these questions were astronomical that they could not help but revive his Jurg-nurtured suspicions of space research; but others—those dealing with crop genetics, for instance, or the education of children—seemed wholly unrelated either to the astronomical questions or to each other.

The entire afternoon was given over to a battery of pencil-and-paper tests, all sufficiently difficult to prevent his finishing them in the allotted time . . . all, that is, but one, wherein he discovered immediately that the questions were stacked in order of increasing difficulty, so that by tackling the last question first, he was able to speed up steadily and cross the wire with the answer to question number one just as the bell rang.

These consumed five hours, and he took them all nearly birthday-naked. He had been kindly supplied a sort of breech-clout or dhoti which prevented the many different chairs he had to sit in from tattooing his bottom indelibly, but that was all. When they were over, however, he was led back to his clothes

and allowed to resume the terrified and nearly famished Tabath; she fairly leapt onto his arm, on which she found more than enough nervous perspiration to sate her hunger and make her grow half an inch in length in the bargain. To Jorn's consternation, however, his suit itself was immediately whisked away; he was given instead a tailored coverall of totally strange design. He was somewhat mollified to find that it fitted him far better than the suit ever had, and that it was of expensive material and fine workmanship; all the same it had so many pockets, zippers, tags, and attachments of odd location and unknown function—including many metal devices which looked for all the world like latch-staples—that even its undoubtable luxuriousness made him feel more nervous and outre than ever.

Then back into the labyrinth again, to a new room which proved instead to be a small but well-appointed apartment. Here he was given an excellent dinner; and, for a wonder, left for nearly three hours entirely to himself and—insofar as he could tell—unobserved. He was grateful; he had plenty to think about.

On the whole, though it had been a gruelling day, it had not been a bad one. At the very least it had seldom been dull, as most of his ordinary days were; he had been occupied every minute until now. Furthermore, he had gotten two first class meals out of it, and an expensive—though

funny—new outfit (providing that they planned to let him keep it; that, of course, was not any too likely). And it had certainly all been novel; even if he failed to get the job, he could while away many a day to come with wondering what it could have been, playing with the manifold clues which had been heaped upon him today like pieces in the world's most mammoth cut-out picture puzzle.

As the third hour progressed, however, he found himself first becoming gradually relaxed in spite of himself, and then imperceptibly crossing the line from there into restiveness. It was all very well to treat a superfluous male job applicant like a captive king, but he knew better than to suppose that it was being done out of pure nobility. There had to be a rationale behind this elaborate series of procedures; and now that he had been given the chance to recover his strength, his breath and his perspective, he felt an increasing urgency to get on with it. Even a labyrinth, after all, is supposed to have a heart—or at least, an exit.

Then there was a knock, and while he was still considering this unusual amenity, the door opened soundlessly. The young woman who came in could hardly have been any older than he was; in fact, though he was abominably poor at judging such matters—any woman with a reasonably competent or so-

phisticated manner usually struck him as being older than Jorn was—he thought she might well be younger. She was certainly very feminine; though she was wearing precisely the same outfit he was—evidently it was a kind of uniform—she filled it much more interestingly. After a moment's hesitation, he stood up.

"You're Jorn Birn," she said, looking up at him out of violet eyes with what he took to be a sort of automatic, impersonal appraisal. It did not really seem to be a question, but for want of any alternative, Jorn answered it anyhow.

"That's right."

"I hope you've finished your meal. If so, we can go now."

"I'm finished, thank you," Jorn said. "Go where?"

"To see the Director," she said, a little curtly. Evidently she was not used to being questioned by applicants. "We're ready for your interview."

"My interview!" Jorn exploded. Abruptly, he had had more arrogance, impersonality and mystification than he could take. "What else have I been getting all day, anyhow?"

"Interviews, of a sort," she said coolly. "Naturally. Otherwise you would never have gotten this far. But now you're to talk to the Director—that's a different thing entirely."

"I see," Jorn said. "Meaning that I'm finally going to be told what it is that I'm applying for?"

"Obviously."

"If it were obvious to me, I wouldn't have asked," Jorn said. "However, lead on. After all, it is what I came here for."

As she turned, another thought occurred to him. "By the way," he said, "you know my name, but I'm afraid I didn't catch yours."

"I didn't offer it," she said. "And judging by your attitude, it's not likely that you're going to need it. I certainly hope not, anyhow. Come along."

He followed her out the door. On the whole he felt grimmer than ever.

"You don't make it sound as though it's up to you to decide," he said, a little maliciously.

At that she stopped in her tracks and swung on him. Her normally pretty face was drawn into an astonishing, unmistakable expression of pure disgust which left him speechless. He had long since become resigned to being rather unattractive, as well as superfluous; but somehow it had failed to occur to him that he might even be disgusting as well.

After an instant, however, she turned her back on him and resumed her march down the empty corridor.

"No," she said, in a light neutral voice which gave no hint of the spasm of emotion her face had just betrayed. "That's up to the Director."

The Director's room was seemingly in the innermost keep

of the fortress that was Room a-10-prime, but somehow it was light and airy all the same. Not greatly to Jorn's surprise, it was opulent as well, though its opulence was of a rather standardized sort: wooden desks instead of metal ones, chairs with dull red cushions instead of gray, a patternless carpet—also dull red—instead of a scuffed series of coats of rubber-base paint. There were five people there, not counting himself and the girl, among whom he recognized, with pleasure, only Dr. Hary't Chase-Huebner.

Very little of this, however, held his attention more than a moment. Thereafter he had eyes only for the Director.

The Director was a man.

"This would be Mr. Jorn Birn," the Director said, looking up from a fascicle of papers elaborately fastened inside a crimson folder. "Thank you, Ailiss; please sit down and join us. And Mr. Birn, please be seated there at the table. We're very pleased to see you, let me assure you."

Jorn muttered something which was doubtless inane—or if it was not he would never know the difference, for he forgot it almost before it was out of his mouth—and sat down. He was not, of course, stunned, for after all, men did hold positions of responsibility here and there; but he was certainly surprised, and somewhat baffled. He was also a little relieved, for an ac-

cidental side glance at the stuffy young woman who had been his guide—Ailiss—had captured on her face the identical spasm of disgust which had so upset him in the corridor; but this time it was bent upon the Director. By its intensity now, he saw that it had been meant for the Director even then; it had very little, if anything, to do with Jorn.

Which was very strange, for the man did not seem to be particularly disgusting. True, he was deformed, which was unusual in this day and age. But he carried it well, and besides, he was hardly a monster; his deformity was not so specific that a name could be given to it. He was only . . . somehow out of proportion. Jorn's first impression had been that he was hunchbacked, but actually he was not so twisted as that—at least, not solely in that direction. He did have a hump on his shoulders, but his shoulders themselves were enormously broad, so broad that the hump might have been nothing more, or almost nothing more, than a great knot of muscle which had grown to take advantage of all that leverage. His chest, too, was huge, and so were his arms, particularly his upper arms, which looked capable of supporting aloft the cables of a suspension bridge. Given only this much of him, Jorn could have said no more than that he was obviously a physical giant.

Yet obviously, he was not. Jorn could not see the lower part

of his torso, since that was hidden behind the desk, but the head atop that magnificent keg of a chest was disconcertingly small, and supported by a correspondingly scrawny neck. The forearms tapered almost into sticks, at least by contrast to the mighty thews above them, and ended with hands absurdly narrow and delicate.

And most incongruous of all, the Director was old. The stringy neck was wrinkled, the hands were knobby and freckled, the scalp bald and discolored, the face pouchy, the mouth white with the whiteness of creases stretched flat by a full set of dentures. Were you to look first at the eyes, furthermore, you would think by their intricate red stitching of broken capillaries that the Director might be as much as seventy-five years old . . .

And then you would not; for those bloodshot eyes were as green as lightning, and as full of danger. Suddenly Jorn realized that the Director had been waiting calmly, all this time, for Jorn to take his measure—and had been watching how Jorn went about it. Jorn tried to look away, embarrassed and confused, and promptly found it almost impossible to do.

The Director smiled frostily, and ended the mutual inspection with a peculiar writhing gesture of his whole visible body, as though he had flexed all of his great anomalous muscles at once.

As a warning? Or was it simply some titanic equivalent of a shrug? Jorn found it impossible to tell, especially since the Director was the only person in the room except Dr. Chase-Huebner who was not wearing the odd coverall, which Jorn was now quite certain was a uniform. Instead, he wore a loose-fitting kind of smock, fastened only at the collar and the wrists, which allowed the strange muscular convulsion ample play without revealing enough of its details to permit Jorn to interpret it.

But at the very least, Jorn was abruptly surer than ever that he was out of his depth. Perhaps that was all that the Director had intended. If so, it was thoroughly convincing.

"I suppose you have realized, Mr. Birn," the Director said at last, "that this is essentially a project in space research. I don't of course know at what point in the tests this occurred to you, but at least I observe that you are still with us. So let me ask you this: are you still interested in the job?"

His voice, a light tenor astonishing in so big a man—or was he indeed so big?—at first rather distracted Jorn from the substance of what he was saying; and then, Jorn found the question itself very hard. Finally he said:

"I think so, sir. I wouldn't be interested in any of the ordinary projects in space research that I hear about in the press— I'm well, not quite ready for suicide.

But this one looks like something different; if so, I'm still interested."

The Director smiled a wintery smile. "Exactly so," he said. "Then, I'll proceed. This project emerges from a discovery in basic physics called the Ertak Effect, named after me, as is quite proper since I'm its discoverer; my name is Helminth Ertak. This effect is primarily that of the propagation of patterns—patterns of any kind—to remote, pre-selected areas of space. They go as transforms of the motion-waves of their constituent sub-atomic particles, but essentially without losing their integrity . . . Forgive me, Mr. Birn, but you have the expression of a man who is not following me very well."

"I'm hardly following you at all," Jorn confessed. "The terms are more or less familiar, but I can't seem to make them coherent."

"Then we'll skip the theory—there'll be plenty of time for that later—and concentrate on the consequences. Primarily, what I was looking for was some method of communication with interplanetary ships and planetary colonies which would be reasonably fast, preferably instantaneous if that was possible. One reason we have so much trouble in recruiting for space research is that we can't keep in decent touch with our volunteers once they're launched. They come to feel as though they'd been aban-

doned very early in the game, which effectively they have though through no fault of ours; and somehow or other, the word leaks back home, and results in just such an attitude toward ordinary space research as you have just exhibited. Once the glamor wore off it, it became known as a form of suicide—mostly because we couldn't think of any way to talk to the volunteers, once they were in space, without a long time-lag between sentences."

Ailiss cleared her throat ostentatiously. Ertak ignored her.

"However, the Ertak Effect provides us with the means of communication we needed. Though alas it isn't instantaneous, and probably that hope was impossible of realization from the beginning, it is at least *much* faster than the velocity of light. In fact, it's better than twenty times as fast, which is certainly a substantial gain, wouldn't you say?"

"I was taught that beating light speed was impossible in itself," Jorn said faintly.

"So was I. Nothing so irritates me as physics-by-flat. But that's not all, Mr. Birn. Shortly after we began to develop the necessary apparatus, we discovered that the Ertak Effect provides much more than a fast method of communication over long distances. It can send a physical object just as well as it can send any other sort of pattern. Both, after all, are simply problems in information transfer; they

differ only in their orders of complexity. Transforming this implication from theory into hardware took a long, weary while, but we have now done so."

He paused expectantly, but Jörn was again quite lost. He could only shake his head helplessly.

"To be brief, then," the Director said, "we now have a practicable interstellar drive."

"Interstellar?" Jörn whispered slowly. "With . . . with a ship to go with it?"

"The ship is in the building," Ertak said, leaning back in his chair. He was visibly satisfied with the sensation he had produced by his summary, though certainly he must have seen it many times before in other interviews. "And we are surveying suitable target systems. There seems to be no shortage of them, especially since the first trip will be wholly exploratory, with no attempts at planetfalls. We might even skulk around the area of the Great Nova while we're at it, just to get a close look at the remains of an event which influenced our history so much. Why not? It would only add a few months or so to the trip!"

Jörn could find nothing further to say. The Director seemed slightly disappointed.

"Well," he said at last, "this is why you're here. We are building only one ship, necessarily; but we are recruiting two

crews, the one to understudy the other. You are only the fourth man to get through our primary screen, so we owe you a choice. Providing that you survive the secondary screening—and the training programs thereafter—which crew would you like to be on: the working crew, or the stand-by?"

"The 'working crew' is the one that will actually go on the trip?"

"Yes," Director Ertak said. "The stand-by crew is only to replace washouts, or men invalidated out, or killed in some accident—the great Unforeseeable."

"I want to be in the working crew," Jörn said, without an instant's further hesitation.

For some reason, this did not appear to please Ailiss O'Kung. More surprisingly, it did not appear to please the Director much, either. He turned to the girl with a petulant expression and said crossly:

"You are going to have to do something about your primary screen, Ailiss. It's selecting out nothing but would-be heroes—and we *do* need a stand-by crew, after all."

"I can't control the way you phrase your final questions," Ailiss said between white lips. "If you *will* call the number one crew the 'working' crew, then of course every jobless drone who gets through the primary screen will opt for it. Try calling it the 'throwaway' crew and you'll see the trend reverse completely—as I've already recom-

mended till I'm all out of patience."

"I see you are," Ertak said drily. "But let me remind you that a complete reversal is not what I want either. Each man on the stand-by crew needs to be emotionally ready to go, if we should need him. However, you have a point. I'll take it under advisement."

"That's what you always say," Ailiss said; but the Director abruptly seemed to have given up heeding the bickering. So, in fact, had Jorn Birn, who was suddenly overwhelmed by the realization that he had a job.

And not just any ordinary piece of suicidal space research, a ghost of Jurg Wester reminded him silently. These people didn't do things by halves. They were going to send him to the stars.

"That's enough," Ertak's voice said sharply, cutting through his bemusement. "Mr. Birn, it now becomes necessary for you to go home and settle your affairs; we will send you further instructions in twenty-one days. The rest of you, report to me tomorrow as usual. This session is closed."

And once more, the Director's body was briefly convulsed by that anomalous, pulsing shudder.

CHAPTER 3

YOU mean you really got it?" Jurg Wester said, in hurt disbelief. "What are you going

to do, anyhow—drop out of the satellite station in a barrel and see how high you bounce?"

Jorn looked critically at his only dress nightgown, stuffed it into his luggage, took it out again and threw it into the trash chute. He was not very much astonished to find how little he owned that was worth anything at all, even to him; but it was surprising to find that most of his few prized possessions were now also quite meaningless.

The vegetable-grading process also helped him to delay answering Jurg, whose question annoyed him in at least six specifiable ways and in an indefinite number of others which he could not at the moment identify. Jorn had never specifically been told not to discuss the job outside of Room a-10-prime, but he nevertheless retained a strong impression that he had better be discreet. Ertak and company had not made any attempt to tell their applicants what they were applying for, and if Jorn's experience was typical, the secret never got out except to those who had been accepted. If that was the way the Director was playing it, it ought certainly also to be Jorn's, at least this early in the game.

"It's space research, just like you said it would be," Jorn said. "And it's outright suicidal as far as I can see. In fact it's the craziest thing of its kind I've ever heard of."

"What kind of thing is it?"

"I don't think I'm supposed

to say. But Jurg, damn near everything you said about it in advance was right. I don't see any harm in telling you that, since you smelled it long before I did."

"I'm not half as sure of it now as I was then," Jurg said darkly. He watched with obvious incredulity as Jorn jettisoned a threadbare but otherwise perfectly good formal shirt, with his name embroidered on the pocket and a delicate pattern of berries and leaves appliqued along the sleeves. "If it's all that suicidal, why are you so hot for it? It doesn't make sense."

"Because I'm sick and tired of these barracks, and sick and tired of being useless, that's why," Jorn said. "It's a job, and I've got it. All of a sudden that's enough for me. There's no law that says you have to like it. I'm the guy that's taking it, and I like it. Isn't that enough?"

"I suppose so," Jurg said, nibbling gently at one fingernail. "I don't know. I mean, great Ghost, Jorn, how could I know? What is it, anyhow? You can tell me, I won't blab . . . but I've got to know. You're a pretty sharp article, I've known that all along, you wouldn't let yourself be trapped into any deal that was *just* like what I thought it was. What's the difference—the kicker? Come on, you've got the job, and I'm still stuck in the conclave, as useless as ever. How did you know to grab for this, while I was still thinking it was hopeless? I need to know; I

missed out this time, but I don't want to miss out the next. You've got to tell me."

Jorn straightened slowly and looked at Jurg. He still disliked the man as much as ever, but he could hardly deny that in that burst of candor he found more to admire than he had ever seen in Jurg before. But what more could he tell him?

"I don't know how I got it," Jorn said at last. "They take you through a whole day of tests, and a lot of them are rough. After I passed them—and I don't know how I managed that because most of the time I didn't know what they were testing me for—they told me what it was all about, and asked me whether or not I wanted to go along. I decided that I did, but maybe I was out of my head to do any such thing."

"Do you think—I could pass?" Jurg said in a low voice, looking down at his sandals.

"I don't know what to think. I don't know how I passed—so how could I know about you? But Jurg, it is space research. Is that what you want?"

"I want a job," Jurg said. "You haven't told me much and I suppose you can't. So all I can think is that if you could get it, maybe I could too. Then I suppose I'll make up my own mind whether it's suicide or not. And whether or not I want to commit suicide that badly, in that particular way. Is that how it goes?"

"Yes," Jorn said, closing his valise and shutting the snaps. "That's pretty much how it goes."

"All right, then I'll take a stab at it," Jurg said, standing up. "And if I get it, Birn . . . Um."

"Um? What's the matter?"

"Another question. Can I take Koth?"

"Sure you can. You'll have to leave her behind for part of it, but you'll get her back at the end."

"Good. Okay. I'll see you there."

"You've left a speech in mid-air," Jorn said curiously. "You were saying, if you got the job—"

"Yes. If I get the job, I'll thank you for steering me to it. But don't expect any more pats on the pants, Birn. You made a point of being secretive about it when you left, and what's more there's a lot you could tell me that you haven't, and don't think I don't know it. If I make it all the way, it'll be on my own steam, not because you went out of your way to help me. After that, devil take the hindmost."

"And the hindmost's familiar," Jorn said, shrugging and turning back to his puny suitcase. "That suits me fine."

And in fact, he realized, he had not answered one of Jurg's questions as candidly as he might have, though only because he had misunderstood it. Obviously the substance of the question about Koth had been

whether or not she would be allowed along on the trip itself, not just during the interviews and testing; and about this Jorn had no information whatever, only an automatic assumption which might very easily be wrong. After all, presumably mass economy would have to be practiced even more stringently aboard an interstellar vessel than it had to be in local interplanetary spaceflight.

But then, the entire status of the familiars was ambiguous, not only in the area of Director Ertak's project, but in society in general. Wholly a product of the laboratory—the most complex life-form the biochemists had yet managed to produce—they belonged to no group in nature, had no real relatives or taxonomical status, no past nor any role in the drama of evolution. It was generally agreed that they were sexually differentiated; but there were not and had never been any males of the "species"—they reproduced parthenogenetically, and even that only under highly special, highly artificial conditions. Though they looked like a sort of animal and were popularly supposed to be such, even that question had not entirely been settled: their lack of digestive organs and their extremely simple nutritional needs were almost mold-like in character, so that many experts maintained that they ought to be thought of as saprophytes, rather than true parasites. On the other

hand, their defensive teeth, their mobility and their obvious—if limited—self-consciousness and awareness of their environment were not plant-like at all.

Even the popularity of the creatures had come about through a long series of flukes. Their parasitism was a necessary condition of their existence; the biochemists had not yet been able to turn out an independent entity of that degree of complexity, and many of them, sensitive to the possibility of a charge of manufacturing vermin, were not in any hurry to try. The fact that the first successful experiment had been performed by a man had made all the succeeding generations dependent upon traces of testosterone and other androgens in their "diet"; and this nutritional prejudice, plus the advantages that the creatures took up no living space at all, cost nothing to maintain, had no fleas and required neither bedding nor toilet facilities, had all combined to transform a hapless test-tube freak into an almost universal pet in the short span of fifty years.

In that time they had proven their right to be regarded as truly living creatures by their marked individuality and the unpredictability of their behavior. In that sense it had to be admitted that fifty years of experience with them had raised many more questions than it had resolved. The woman-dominated government, viewing with

purse-lipped matronly disapproval the obviously compensatory and symbolic aspects of the man/familiar relationship—especially among the vast masses of jobless bachelors—developed powerful urges toward banning them. However, a two-year fact-finding commission was unable to turn up a shred of evidence that the familiars were harmful in any way, except for an unexceptionable tendency to bite anyone who seemed to be menacing either the creature or her master. If nevertheless there was subtle psychological damage being done—the suspicion that had launched the inquiry in the first place—it proved impossible to demonstrate.

It did not seem very likely, Jorn thought with regret, that any male allowed into the crew of an interstellar ship would be permitted so purely supernumerary a piece of baggage. The deprivation, if it did take place, was going to seem strange. He had had Tabath since he was thirteen years old—she had been a birthday present from one of his fathers. If his relationship with her—always trouble-free, sometimes amusing, often comforting, and by now almost as automatic as his relationship with the strange person who lived inside his skull—had also been damaging in some hidden respect, there would be no faster way to find that out than having her stripped away from him for good and all; for she would not

last until his problematical return. She could live only a little over a day without him.

The prospect was anything but pleasant.

He saw the last of the residence conclave on the twenty-first day. From then on he was permanently stationed, not in Room a-10-prime, but in a geographically indefinite, quasi-abstract entity simply called The Project. Its headquarters was an immense camp and launching field, ultra-secure behind high wire fences in the middle of an appalling salt desert, located Jorn could not say where. He was flown there, along with four other recruits (all female), and saw only that the government rocket spent most of its time crossing an ocean; by a route which was devoid of any check-points he might have been able to recognize. Quite possibly this was unplanned; since Jorn had never before flown in anything that went higher, faster and farther than a jitney before, he knew nothing about how to read terrain from a great altitude.

The camp on the salt flats, however, proved to be little more than a sally-port for Jorn and the other recruits. Though there was obviously a great deal of construction, testing and other activity going on there, Jorn was allowed to take part in almost none of it. In the first six months of his training, he was somewhere else almost all of the time; he knew only that he had trav-

elled at least half a million miles in that period—at least, because he had spent three weeks of it on the Moon.

He was equally sure, on less evidence, that he must have travelled at least that far again going round and around in giant centrifuges; in riding rocket sleds down horizon-to-horizon lines of railroad track; and most mysteriously, in sitting patiently or doing exercises in isolation chambers firmly fixed to the earth, while his weight varied steadily and smoothly from nothing at all to close to nine times normal. He also covered considerable ground crawling flat on his belly dragging a carbine behind him, as though interstellar travel were going to be a sort of infantry operation; conversely, he learned to read terrain from the air in innumerable glider drops over every imaginable kind of landscape.

During none of this—grueling, outre and bodeful though most of it was—did he hear any suggestion that he be deprived of Tabath; and in time the possibility, though it was actually still as great as ever, receded from the forefront of his attention and went underground. If the familiar herself found the training alarming, she gave no sign; or, more accurately, she seemed to find the world she lived in almost continuously alarming, precisely as usual, but dismissible as long as she could continue to ride through it on Jorn's arm.

Of all the rigors he was forced

to undergo, one of the most difficult to bear up under was the fact that his section leader was Ailiss O'Kung. Obviously she had been through it all before, perhaps several times, and regarded the gasps and struggles of the recruits with easy contempt; though she allowed no one to fail through unfamiliarity or exhaustion, her definition of these two categories only barely distinguished them from stupidity and gold-bricking, with both of which she was utterly merciless. And yet, oddly, she lost fewer recruits than any other section leader.

Though he tried to tell himself that the impression was nonsense, Jorn was nevertheless convinced that Ailiss went out of her way to assign him the roughest, the dirtiest or the dullest details of every assignment. Since it was impossible to discover a reason for this, he was forced to invent one, this being the instantaneous dislike she seemed to have taken to him when they had first met in Room a-10-prime.

In response, he swore in private, gritted his teeth and bore down harder. Simple male pride was not going to allow him to admit that a girl was any better at all this than he was (the simple fact that she *was* better notwithstanding; she might be better at it now, but he'd show her). Somehow it quite failed to occur to him that approximately the same thought might be being cherished in the heads of every

male in the section, and that Ailiss' attitude was expressly designed to provoke nothing else. As for the women in the section, they were mostly a hardy, uncomplaining, almost offensively cheerful lot, who quickly became frighteningly competent, and seemed to have no threshold of boredom whatever.

At the end of the six-month period, the section was broken up and reassigned, in groups of two and three, to new and more specialized types of training. This still left Jorn and Ailiss stuck firmly together, since he had been so unfortunate as to show talent in piloting and navigation, which was her own area of specialization.

In the new section, for the first time, he found himself also yoked to Jurg Wester.

The encounter took place, wholly inconveniently, during Jorn's second flight to the Moon—much different from the first one, in that now he was turning a trial trick as cadet astrogator. Working under Ailiss, he allowed himself to become rattled at the computers during turnover and was sent down to the ward room in disgrace . . . and there was Jurg, looking passing smug.

"Well, great Ghost," Jurg said. "It's the boy wonder, himself. I thought they were going to feed you to the meteor-eels, long ago. Don't tell me you're in my section!"

"It looks that way," Jorn said. He looked Wester over carefully.

He was wearing a brassard which marked him as a temporary lance-corporal, only a recruit rank but nevertheless higher than Jorn's own. This had the makings of a bad situation. "Is this your first lunar trick?"

"It sure is. Old Corporal Wester was in no hurry. All the same, it seems I'm a stripe or so up on you already."

"So you are. Congratulations."

"It wasn't luck, I can tell you that." He grasped Jorn by the elbow and lowered his voice confidentially, although there was no one else in the ward room. "Listen, maybe I shot off my mouth a little the last time I saw you, but you know I didn't mean anything by it, don't you? Old Big Mouth Wester, I just love to sound off. But I owe you a favor for putting me on to this nice soft berth. And seeing as how you haven't got a stripe yet, maybe I could give you a tip or two. Let bygones be bygones. Okay?"

"Fine," Jorn said. "Only I don't see what's so soft about it. You had to go through most or all of what I did or you wouldn't be here, let alone with the stripe. And it didn't strike me as so soft."

"Oh, I *work*," Jurg said scornfully. "I work like hell and I make a big impression—when I have to. I was the only man in my old section who never goofed in plain sight. I always do everything exactly by the books, even if it's nit-witted to do it that way. That's what The Project

says it wants and that's exactly what I give 'em, right down the line."

"All right, but if that adds up to a soft berth, I'll still take concrete," Jorn said, baffled.

"You're not using your head, Birn, I can see that. For instance: who was your section clerk?"

"One of the women—you wouldn't know her. She was top-notch at it, too."

"No doubt," Jurg said. "But in my section, I was clerk. I saw to it that I was. You'd be surprised how much a simple thing like that can save you in wear-and-tear on the feet—and in hours of sleep."

"I sure would. In our section the clerk's job was an extra; it didn't save the girl from even one of the regular details. She did it nights, for a proficiency rating, and if the strain had slowed her up in the field, she'd not only have been broken but giggled to boot."

"Your section boss must be crazy," Jurg said.

Much as Jorn had learned to loathe Ailiss O'Kung, he knew this proposition to be untrue. Ailiss did not differ sharply from the few other section leaders he had had a chance to observe, except that—unhappily for Jorn—she was better than they were. Suddenly, he thought he had the answer.

"Jurg," he said, "are you stand-by or throwaway?"

"Stand-by, naturally. I'm not

going to let a job like this be a one-shot proposition. You guys can have the heroics—"

And then his eyes narrowed. "Oh, ho," he said. "Maybe I've been cutting my throat all this time, eh? I suppose this is your *second* round on the Moon?"

"Yes, it is."

"So you're a brevet officer?"

"No, not now. I was cadet navigator, but I just finished lousing it, just before I came down here. For all I know I may have had it for good—or at least have to start again from the bottom."

"Somehow I doubt it," Jurg said, his voice turning ugly very gradually. "All this time I've been trying to give you a hand, you've been standing there with that klax-eating grin on your face, congratulating yourself that crewmen rank stand-bys regardless of stripes. Big-hearted Wester! Well, enjoy it while you can, Birn, because I'll tell you something I don't think you know—since you let a woman interpret the rules for you: Throwaways don't rank stand-bys *until they're actually on the crew*. It doesn't go for recruits like you and me."

"I never thought it did," Jorn said stiffly.

"I'll bet you didn't. But just in case you did—when we get back from the Moon, I'm going to demonstrate the principle. Then we'll see how long that smirk of yours lasts."

"I sort of doubt," Jorn said, remembering the month after

his own first lunar assignment, "that you'll find the time. But you're welcome to try."

"Birn!" Ailiss O'Kung's voice came stingingly through the ward room annunciator. "On the bridge—on the double!"

Jorn took off without bothering to make any manners. His last glimpse of Jurg Wester's face was not reassuring.

Turnover had already been completed by the time he swam his way back into the control cabin, but the atmosphere there was anything but the usual one of cautious relaxation preceding a low-gravity landing. On the monitoring screen from back home was the face of Pol Kamblin, the Project's senior astronomer, whom Jorn had come to know slightly since astrogation had come to be his own principal cross. He was at a loss to account for such high level supervision of Ailiss, who was more than competent to handle much trickier landings than this; yet Kamblin's face looked frighteningly stern.

"Computers," Ailiss said briefly, without looking away from the ranked data board before her. "I want a conversion to a cislunar ellipse with an intersect at Salt Flats—as close as possible to one hundred per cent on momentum. And we'd better have landing fuel left, or I swear I'll have your hide in the Hereafter."

"But there isn't enough—"

"There's got to be," Kamblin

said quietly from the screen. "You've got forty-eight seconds to pick your orbit. Better move."

Jorn moved, without wasting another second in wondering if this might possibly be another test—with the lives of everyone aboard dependent on his skill. The dilemma at bottom was simple: computers are hundreds of times faster at calculation than human brains are, but they are also idiots; they have to be programmed by a human brain, or they will say nothing about any problem but, "Duuh?"

He worked faster than he had ever dreamed he could—even as recently as half an hour ago. When the answer came through he had no idea whether it was right or wrong, nor was there any time left in which to find out. He fed the figures to Ailiss; the rockets fired briefly; and then the ship was beginning its long slanting fall around behind the Moon.

The mountains slid beneath them like thousands of saw-toothed fangs. Only after the ship crossed the terminator, and the moonscape was plunged into darkness, did Jorn think to recheck his figures. They seemed to be right.

They had to be. There was not a drop of reaction mass available for corrections.

"I check you," Ailiss said suddenly. "That's the way it's *always* supposed to go, Mister—flat out with all speed and correct the first time."

Jorn said nothing, which was what was expected of him. He was reassured, a little, but the margin was still going to be too narrow for comfort.

"I check you also," said Kamblin's voice. "Provided you don't run into a storm on the way down. I'll call meteorology and report back." The screen went blank.

"Damn," Ailiss said. "I was going to ask him why they loused up my mission."

"He didn't give any hint at all?" Jorn said, emboldened by this sudden outburst of confidence.

"Not much. The Director has called a joint meeting of staff and crew, for right now, or maybe ten minutes sooner."

"And you've no idea why he might do that?"

"The only reason that occurs to me," Ailiss said grimly, "is that the funds have been cut off—and the Project is cancelled. Stand by, here comes Kamblin with the weather."

Even the Director's big office could not have contained a joint meeting of staff and crew, if by "crew" was meant all trainees, both standby and throwaway; Ertak had to settle for the brevet ranks alone. Nor could he have his meeting "right now or ten minutes sooner," for a number of the people he needed had been long distances away at the time the call went out—some of them farther than Ailiss.

Nevertheless, when the meet-

ing assembled, twenty-five rumor-filled hours after Ailiss' and Jorn's last-teacup-of-propellant landing, it was sizable enough. Most of the people there Jorn had never seen before, or seen only briefly without knowing who they were. Besides Ertak and his four personal staffers, there were Ailiss, Dr. Chase-Huebner, Kamblin, and all the surviving members of Jorn's class and their section-leaders. (This, however, did not include Jurg Wester; there were no standby trainees of any rank present.) The staff members who would command the standby crew were, however, there in force. Of them, Jorn recognized only Margit Splain, the standby captain. The red room was decidedly crowded.

"Thank you for your promptness—in some cases the cause of considerable personal danger to yourselves," Ertak said, in his light wintery voice. "I would not have asked you to take the risks had we not been confronted with a crisis of the very first order—in fact, of a unique order. I am not very well equipped to explain that and I am going to give the job to Dr. Kamblin in a moment. First, however, there's one other thing on my mind."

He swung his head toward Ailiss.

"Lieutenant O'Kung, we are going to have to discard your new nomenclature for the crews. It turns out that in the four months we have been using

it, we have done ourselves considerable damage."

"In what way?" Ailiss said coldly.

"It has seriously deteriorated the quality of the men we've been recruiting as stand-bys. While I was waiting for you all to get here, I had some samples taken among the stand-bys available to me here at the base. The sampling shows that fully a third of the stand-by recruits we now have think of the training, hard though it is, as essentially a make-work kind of labor camp. If those men were suddenly asked to go on the actual mission, they'd panic."

"I don't think so," Ailiss said. "I pre-tested their attitudes in that area, naturally, Director."

"Did you throw them the proposition itself, as an immediate reality?"

"No," Ailiss said. "There were a good many obvious reasons why it wasn't advisable."

"Maybe it wasn't then. It's advisable now. I threw them the question—and they break like paperboard spoons."

Ailiss was silent for what seemed like many minutes, though in actuality she made a quick recovery. "Then, granted that the nomenclature should be changed—and that we'll have to jettison those men. But what moved you to such an extreme test in the first place, Director?"

Again that peculiar writhing shrug, which seemed to involve the Director's whole upper torso.

If it still aroused the same revulsion in Ailiss, her expression this time did not betray it.

"The fact," Ertak said grimly, "that we are going to need to use both crews—at a minimum. Time we got down to business. Dr. Kamblin, please take the floor."

"Certainly," Kamblin said. He stood, quite unruffled. He was really quite a big man compared to Ertak, but he was older, and there did not seem to be much drive to him. Despite his eminence in his field, many decades of subjection to women had made him non-committal about anything that mattered to him, a man determined only to avoid becoming involved. "The situation, as briefly as possible, is this:

"As you're all too well aware, the solar pulsation cycles have been getting increasingly out of phase in the last century or so, and the solar constant has risen by as much as a thousandth of a percentage point. Thus far, these things haven't much more than inconvenienced us. For example, they've given us hotter summers than we like; and they've made weather control increasingly complex, sometimes even unmanageable.

"Nevertheless, we—the astrophysicists and other scientists, I mean—were interested in finding out the *why* of the changes. At first it was very difficult to unearth any clues. The Sun seemed much the same as ever,

consisting mostly of hydrogen, with circulating traces of magnesium, oxygen, aluminum, silicon, phosphorus, sulfur, chlorine, argon and potassium—all, of course, in highly ionized states, and in traces only, since most of these elements are at the core of the star, invisible to our spectroscopes. (Forgive me the catalogue; I assure you it's necessary for proper understanding of what follows.)

"Nor did the solar constant at first provide us with any clues. The very slight increase corresponded to no infra-stellar process that we could account for. As for the other findings, I'll summarize by saying that they were all quite consistent with a star of our Sun's age and mass.

"It was only when we applied the increase in the solar constant to the *core* of the Sun that we found what was happening.

"In brief, the heart of our Sun has now become sufficiently dense so that the temperature there has passed 2,000 million degrees, in a hell of stripped and mangled nuclei and intense gamma radiation such as no finite mind could hope to imagine. At this temperature, the familiar metallic trace elements are beginning to undergo fusion. We have already picked up the first faint shadow of a titanium line. Soon we shall be seeing vanadium; and after that, with increasing rapidity, chromium, manganese, iron, cobalt, nickel and zinc. The rest of this history, alas, we know all too well.

"We have seen it before."

This time the silence was actually long, and screaming with shock and tension. Jorn had no need to ask any questions. Though he had not understood a tithe of the technicalities of Kamblin's explanation, the astronomer's final remark could have reference to nothing else but the Great Nova.

The Sun was going to go, the same way.

After a while, Kamblin went on, almost in a whisper. "We were fortunate in several ways, as a planet. For one, consider the great distance of our orbit from the Sun; since you've been studying other nearby systems lately, you'll have some appreciation of how unusually long our One Astronomical Unit is. Secondly, life apparently evolved here very late, after our Sun had gone through most of its swelling phase—a process which takes about a thousand million years for a star the size of ours. But it is just as bad, I'm afraid, to arrive at the end of this process as it would have been to have suffered its growing pains."

"How much longer will it last?" one of the section chiefs asked.

"Not very long. The core temperature will have to reach 5,000 million degrees before the explosion takes place, and that may take a good fifty years—"

"Fifty years!" Ailiss said raggedly. "Dr. Kamblin, that's not—"

"I know," Kamblin said gently. "It seems a stunningly short term for an astronomical process; but bear in mind, Ailiss, that all such processes are exponential, and that this one has been going on for a thousand million years already. By now it is proceeding very rapidly, more so every minute."

"And I am very much afraid that in actuality we have much less time even than that. I won't afflict you with the thermodynamic and geometrical arguments involved, but simply remind you that the solar constant, too, is going to continue to rise. By the time it has risen just five per cent, this planet will be uninhabitable. It will still be here for a while, but there'll be no life on it."

"How long?" Ailiss repeated.

"Nine years," Kamblin said. "It will be possible to work during the first five of those, perhaps during the sixth. Then we will begin dying . . . and at the end of the ninth year, everything will be dead . . . even the bacteria."

"Work? What do you mean, work?" Jorn said almost angrily, finding his voice at last. "Work at what? Obviously there's nothing we can do. This is the end, for all of us."

"The end only for most of us," a musical male voice said from the back of the room. Everyone turned except Kamblin, Ertak and his staff, who of course were facing in that direction already; none of them

seemed to be in the least surprised by the interruption. From the rest of the gathering, however, there arose a gasp of stunned confusion.

Even for those barely possible few who did not recognize the man himself, the ceremonial blue and gold robes told the tale: he was the World Consort. His presence could only mean that whatever he had to say was the contribution of the Matriarch herself.

"I am here essentially to answer the young man's question," he said. "There is work that we can do—work for a whole people, for a whole world. One Ertak-drive ship is no longer enough; we want hundreds—even thousands if that is possible. We are transforming the Project into a mass crash program for the survival of the race. We are going to build, man and launch a fleet."

Nobody spoke. There was no comment anyone could have made which would not have been ridiculously inadequate to the grandeur of the goal.

At long last Ertak cleared his throat and looked around the red room, as if seeking waverers. He found none.

"All right, Lieutenant Ailiss O'Kung," he said, "start weeding."

It was necessary, of course, but it would have been far better for everyone, now and later, if the necessity had not arisen at all. That apparently had been

Ailiss O'Kung's fault—but she had made her recommendation in good faith, and had to be allowed one mistake; if you shot everyone for the first such, you would never have a next generation. Besides, the mistake was Ertak's as well—after all, he had allowed himself to be persuaded, and had turned the recommendation into practice.

Jurg Wester was weeded.

He sought Jorn out at the anteroom of the armorer's shop, where Jorn was worriedly awaiting a prognosis on his space-suit's homing compass, on Jurg's last day at the base. Jorn would far rather have avoided the confrontation, both for obvious reasons and because his training had so intensified that he had no spare minutes worth mentioning. But in a way he too was responsible for Jurg's having enlisted in the first place, so he listened patiently.

"I just want you to know," Jurg said in an even voice, "that this outfit doesn't fool me for a minute, no matter how well they manage to bamboozle you. Do you think I don't know what the news is, already? I saw to it that I had a friend at that meeting, you can take that from me. I know about the nova, and I know about the fleet."

"All right, why not?" Jorn said. "There's always a grapevine, especially on a thing this size. I don't see what harm it does. Everyone in the world will know in another week, anyhow."

"They'll know what they'll be told, which will be half lies," Jurg said. "Ertak won't mention that he busted out most of his best men to begin with, will he? He knows that he'd never be able to call those boys incompetent and make it stick—not on me, and not on most of the others he's booting into the beltways. But it won't do any good for them to clam up about it, because I know the story already, and I'll see to it that it spreads."

"What story?" Jorn said, confused. "Why do you care what I think, anyhow?"

"Because I think you might still be salvageable, once you get the superiority klax pounded out of your head. They fired me and the rest of the boys out of the Project because they're going to pack their survival fleet with women. What else? It was another matter when a star-trip looked like pure, expensive, 'disinterested' research. Then, men were plenty good enough to throw away on it—the usual suicide fodder. But now it's different, isn't it—now that only the people on those ships are likely to live more than five or six years!"

"That makes no sense," Jorn said. "They won't perpetuate the race very well if they concentrate on one sex."

"Oh, they'll carry a few studs along—nice complaisant types." Jurg did not specify who he meant, but he hardly had to. "At least that's obviously what

they're planning. Well, I may upset their pushcart for them before they're done. I didn't go along with their Project for a ride to the stars, in the first place."

"I remember your telling me you didn't. But Great Ghost, Jurg, if you didn't want to go, then why are you making such a fuss about it now?"

"Because *now* I want to go, hero. And I'm going to go. I haven't made up my mind whether or not to take you along. Think about that a while. The boys and I have a lot of very valuable military training under our jackets right now, thanks to the Project—and the Project is turning us loose with it. It'll be no trouble to pass most of that training on, to as many cadres as we have men for non-coms. We even have a few little items of equipment we're taking with us—and it won't do you any good to blab to old wormy Ertak about that, because we've got them taken down and distributed among us in a way none of his female inspectors and other trained animals could detect in a million years.

"By the time you start loading your ships, the government that built them won't be in existence. The next one will be a government of *men*. Men, not studs. Think it over, Birn. There's still time for you—but not much."

He turned, shouldered his pack, and took one step away. Jorn made a two-microsecond

confession of complete wrong-headedness to his own soul, and sent Jurg the rest of the way out the door with a whole-hearted, near-paralyzing full field kick.

It was 100% the wrong thing to do, and it was deeply satisfying.

What Jurg's response might have been, after he recovered enough to realize what had happened, was a question never solved. The two guards outside picked him up, dusted him off, and led him toward the gate with a gentleness which was in fact only an optical illusion. Soon he was out of sight.

There was a *tsk* of disapproval behind Jorn. It was the armorer, a motherly doe sergeant of about fifty whose heart was wrung by the slightest malfunctioning of any device, particularly if the device was supposed to be lethal. She was carrying Jorn's homing compass, in an advanced state of disassembly.

"Some of those stand-bys had such big feet," she said. "It's just as well not to have them stumbling around inside a starship. They might break something . . . As for this compass, it's gone. I'll issue you a new one. It's a shame there isn't time to slip it into your friend's pack, along with the other tinkertoys."

Jorn grinned his relief. "Then you heard what he said."

"I hear everything that goes on in my own shop," she said.

"Once I step out that door, I'm deaf as a post."

"Well . . . don't you think something ought to be done? I mean, like alerting the inspectors, so their packs can be pulled apart as they go out the door?"

"They don't have anything worth stealing, my dear," the sergeant said. "My goodness, you don't think I'd let anybody leave my base carrying anything dangerous, do you? After all, they might *hurt* somebody. Just sign here, and here, and I'll issue you your compass, that's a good boy."

Jorn signed and the sergeant disappeared back into her shop. He felt considerably better.

All the same, it was perfectly true that the survival ships' passengers—as well as their crews—were going to be women, by a vast majority.

CHAPTER 4

BEING young, Jorn was not immediately able to rid himself of his notion—no, it was more than a notion, it was a fact of his brief experience—that five years was a long, long time in the future. He was astonished to see how rapidly Ertak and his staff forced themselves to make huge decisions, which ordinarily should have been weighed for several months at the very least. Now four or five of these might be made on a single typical day.

For a sufficient example, take ship design. The Project's ship on the ways, the *Javelin*, had

been planned as a vessel which would return home well within the lifetime of its original crew. Now it had to be thought of, instead, as a colony-in-flight, able to shelter many generations if necessary. It was of course perfectly true that there were three other solar systems near enough to home to have been detected by the satellite observatories; also true that this implied, with a statistical trustworthiness vanishingly close to unity, that planets were a part of the normal life history of any star; and that these facts logically implied the existence of thousands of home-like, hospitable planets within the *Javelin's* theoretical range.

"But all three of those systems are effectively binaries," Kamblin explained in one of his regular orientation lectures to the crew. "That is, the 'planet' we have discovered going around each of those three stars is a gas supergiant so huge that it's almost hot enough to shine by its own light . . . what we call a 'gray ghost,' too big to be a planet and yet not quite large enough to be a dwarf star either. It's very unlikely that either of the two primaries in such a system will have habitable planets—though of course one ship or another will be able to pass close enough to each system to check that. No, gentlemen, we are all going to have to sweep a considerable volume of space . . . and be much attended by luck."

But spaceships which will also

be colonies are not easily designed from nothing; and an interstellar ship which was specifically designed *not* to be a colony cannot speedily be torn down and changed over. When presented with the time-budget for such an operation, Ertak decided almost instantly against it. The *Javelin* was ordered to be modified in as many small ways as possible, but she was not to be rebuilt, nor was she to be nibbled at drastically enough to risk weakening her present structure. This made sense, but Jorn was not prepared for the corollary decision: that all the *Javelin's* sister ships were to be built to the same design and with only such minor modifications as the *Javelin* herself could safely withstand. This decision too was eminently reasonable, but not to a man to whom five years seemed like a long time.

And as with the ships, so with the world. This decision was not Ertak's to make, but since the principles were the same, so was the outcome. The whole world was *not* converted overnight, or at any other time, to the production of interstellar ships, as Jorn had fuzzily imagined the World Consort to have implied. Doom or no doom, the fact remained that the original *Javelin* at completion would have cost half a billion credits, plus four years in construction time. Her sister ships would cost slightly less than that, but not much—mass production is an almost

meaningless term for a structure like a bridge or a skyscraper or a ship, the savings involved running narrowly between two and four per cent per structure.

Jorn had of course supposed that mere financial cost—and in that word “mere” there resounded hollowly a huge hole in his education—would go by the board in so ultimate an emergency. Like all the poor, money to him was an abstraction, a frivolity, a curse; as a graduate engineer he knew all about oil, but nobody had bothered to tell him that money is even more necessary and valuable. Skyscrapers, battleships, satellite stations or survival fleets all require a high-energy economy, which means that almost all the goods and services in the world—and hence almost all of the money—must continue to be devoted to keeping that economy at the highest possible level. The farmer may not leap from her combine and take up a hammer on the nearest incomplete interstellar ship; the submarine freighter engineer may not abandon the engines which are propelling titanium ore or sponge platinum from one continent to another; the baker may not cease to make bread; the banker may not take her hands away from the guidance of credit, the raw material of political unity and the only enduring testimonial to man's confidence in man; even the newscaster may not cease from telling all the

rest, who in fact do not know how to hold a hammer and cannot feel or see the escape fleet growing, that grow it does, and any job well done is an investment in the Project.

All this takes money; nothing else will serve.

“Of course we're trading for the moment on the fact that most of the people don't really believe a word of it,” Ertak remarked. “They're willing to go along because the government's buttered on a little inflation; that's how you ease civilians into any war. But that won't last long enough. By the end of next year the bombs will start falling, and then they'll want to run the war themselves, for their own personal protection. That's when the trouble begins..

“I don't see the analogy,” Jorn confessed.

“I mean that by that time they'll be beginning to feel the heat—all of them, not just the neurotics who think they can feel it now. It'll occur to them that the Sun really is going to explode. Then they'll begin to wonder what they're really working for: in other words, whether or not what they're doing is going to get them an entrance ticket to one of our ships. And the moment we have to start paying them in hope instead of in credits, we'll be in trouble—and there won't be a ship in the fleet that's much beyond half done at that point, except of course the *Javelin*.”

“But we are going to be carry-

ing passengers," Jorn said hesitantly. "Lots of them."

"My dear Jorn! Never mind, Ailiss O'Kung says you may be a great navigator . . . Of course we'll be carrying passengers—roughly a hundred for every crewman on the *Javelin*, and even more on the others. But how many people does that come to? We won't know until we see how many ships we manage to build before we have to leave, but I'll tell you this: under the best possible circumstances, the total population of the fleet will be less than the differential birthrate of this planet *for one single day*. Probably a good deal less."

"Still, Director, we won't be taking the old, or the handicapped or . . . certainly not the newborn . . ."

"Ah," Ertak said with a frozen smile. "That makes it look much easier. But let's do a little simple multiplication, by tens. The *Javelin* will be able to carry about twenty-five hundred people. If the fleet consists of a hundred such ships—which would astonish me—then it will leave carrying a quarter of a million. Correct?"

Jorn began to feel sick. The Director saw it, obviously, but he continued his explanation without mercy.

"Now let's suppose that you've managed to disqualify twenty-five *million* people, on sure sound principles. This leaves you with 2,475,000,000 eligible candidates from which to pick 250,000.

About one from every ten million. Would you like the job?"

"No," Jorn said. "Great Ghost, no."

"I don't blame you," Ertak said. "In fact nobody wants it. But all the same, my dear Jorn, somebody is going to have to take it."

Ertak did not take it, nor did anyone else who was known to Jorn, even marginally. Perhaps the Matriarch herself did; if so, it was never written against her name. Nor against anyone else's.

The slashing, ruthless style of it might once have been Ertak's signature, but by this time all such decade-ponderable decisions were being made in his style, overnight, on every level. And possibly only the Matriarch could have killed off so much of the world on principle, long before the moral agonies of even so ruthless a man as Ertak could have been much past conception.

Item: No marginal farmers.

Item: No piece-workers.

Item: No administrators—whether private, government or technical; that was what the crew was for.

Item: No drones.

Item: No infertiles; no disabled; no one over 30, except on the crews; no one under 17; no one with a family history of cancer, insanity, epilepsy, mycobacterial infection, opposition to the Matriarchy, or about two hundred other genetic or possibly genetic defects! no one with a personal history of (nearly five

thousand medical conditions; no one convicted of a major crime.

Item: No one who had left a job without cause within three years before the launching. (The "without cause" clause was window-dressing; the government had no intention of making any check on causes, let alone entertaining any appeals.)

Item: No parasitic skills, such as brokerage or advertising.

Item: No doctors, no engineers, no mathematicians, no astronomers, no unique skills in the sciences or in engineering not already included in the crews.

... And much more. It was a chillingly inclusive list. Some of its categories included the equivalents of whole nations. Very little of it was ever made public; there were some parts of it which were never even written down; and some others so coldly slaughterous that they could not even be deduced by anyone not charged with the choices involved.

But it served, for a while. It cut the choices back, especially during the privileged period when the world did not know that they were being cut back. At term, there were left only a single million possible choices for each passenger.

And in the end, it became impossible to disguise this piece of elementary arithmetic, or to protect the migration from it, even with the greatest ill-will in the world.

"And besides," Dr. Chase-Huebner said gently, "I am afraid that in all conscience we must also leave the animals behind."

Ertak leaned forward, splaying his elbows out on his immense desk. In this position his shoulders loomed so large that it was hard to imagine how his torso could support them; but his voice was oddly subdued, even defensive.

"It's a little late for vegetarianism, isn't it?" he said. "Or being kind to animals? We've ruled people out by so many millions, we can hardly start trying to trade cows for them."

"Of course not," Dr. Chase-Huebner agreed. "I wasn't talking about meat animals. We need them; vegetable proteins are incomplete. We'll have to carry cattle and carry them alive, for breeding. No; what I'm talking about are worms, and the like."

Ertak's shoulders heaved slowly. "Go ahead," he said. "But make it brief, please."

"I can be as brief as you like," the biologist told him, compassionately. "You knew it would come to this, I'm sure. And you know that I don't mean to mount a personal attack on you, Hari; give me that much credit."

Ertak said, "It isn't a question of credit, mother." The obscenity escaped into the air without either of them seeming to notice it. "You were always a scientist, and so now am I, or something like one. We face each other as accomplished facts. Sim-

ply tell me what you mean; that's sufficient." He shuddered again. "I'm not unequipped to argue the point—but do me the favor of recognizing that I already know what it is."

"I'm not so sure, Hari. You've been too busy with your drive fields and your proving-stand tests and your training programs to think about worms, or bacteria, or all the other insidious parasites—tumor cells included—that you assigned to me. I've been thinking about all these things, as you asked me to do. Now I'm ready to report:

"The familiars *will* have to be left behind."

"Justify," the Director said. "Pound for pound—"

"—is a nonsense way of approaching the question. Those are not the parameters that we need to fill. Better an ounce of canned fish than a pound of familiar—they're mostly water, and they're inedible, useless, even unable to adapt: dead weight."

"A woman would naturally say so."

"Perhaps. But as I say, that isn't even the argument."

"No? Then what is?"

"Contamination," the woman said quietly.

"Now you're talking nonsense. Familiars contaminate nothing."

"Nothing here, at home. But who knows what will contaminate a virgin world? Do you know how huge a role epidemics have played in the history of mankind? The books tell us the

name of the man who discovered a given continent, but they don't tell us the name of the man in his crew who picked up that continent's epidemic disease and brought it back home with him—back to whole populations that had no immunity to it at all. And who among us is going to take the responsibility of infecting a whole new planet with the mycobacterium, the spirochete, the plague virus, the white death—or *the familiar*, that unknown, unclassifiable thing we have made ourselves? We can't swear as yet that the creature is harmless even to us!

"You don't answer. Well, then, I shall have to answer for you. I say: Nobody. I am empowered to rule on such questions—and I so rule."

After a while, he inclined his head, once. This seemed to be victory enough, for now, considering how well she knew what it had cost him. She smiled gently and made as if to take his hand; but he did not look up and she thought better of it. With a formal murmur of thanks, she turned and left the group.

Finally, the Director's chest and shoulders stirred again, and the movement flowed down his right sleeve, puffing it out above his forearm, which was resting on the desk. From the cuff there snouted out a flat, narrow head, as pink and freckled as Ertak's own hand, and almost as big. It stared at the

closed door by which the woman had left.

Then the still air of the red room was split with a scrannel hiss, like the sudden escape of live steam.

Jorn had no time to puzzle over the sudden inaccessibility of the Director; everything abruptly was going too fast. The five years had in fact almost gone by; and the fleet was, both by definition and a long accumulation of miracles, well more than half done. By now, Jorn was better equipped to understand the awful logic of the simple theory of numbers involved, which ruled that a fleet half finished today may tomorrow have to be dubbed, arbitrarily, all the fleet that there is going to be.

"And we are very close to term now," Dr. Chase-Huebner told a meeting in the red room. These days she spoke for the Director; if anybody knew why, nobody had been able to tell Jorn. "We have thirty ships. A thirty-first, the *Haggard*, is far enough along to be counted in."

"What about the *Assegai*?" someone asked.

"Out of the question. It would take more than a year to finish her, and we haven't got a year. And I'm not just talking about the heat and the storms, either—though both are awful enough already. Public panic is rising so rapidly now that we won't be able to keep workers on the *Assegai* another year without

promising them all a berth on her; and as you all know, our complement is filled. Believe me, I hate to leave that ship behind—I hate to leave any ship behind, but particularly the *Assegai* with all her refinements. But we have to stop somewhere. It would be nice to wait for the *Boomerang*, too; on paper she's far and away the trimmest ship of her class on the ways—but at the moment she's nothing but a keel and a heap of loose I-beams. This has got to be the end."

"Why not call a halt on the *Haggard*, too?" Kamblin proposed. "She'll take another five months, it seems."

"Because," Dr. Chase-Huebner said gently, "we have a crew and passengers for the *Haggard*, and the Director doesn't mean to leave anyone behind whom we have promised can go."

From what little Jorn knew of Ertak, this did not seem very like the Director; but perhaps the doctor herself had somehow persuaded him to so rule. But then, suddenly a thought so wild that sheer surprise prevented him from censoring it came tumbling out of him in a rush.

"If so, how much government are we carrying?" he heard himself demanding, in a voice at the same time cracking with alarm as he overheard his own temerity. "The Matriarch, I suppose; and how many others?"

Dr. Chase-Huebner stared at him. Her expression seemed to be one of reproachful astonish-

ment; but all the same, for the very first time since he had known her, he found himself afraid of her.

"Nobody else," she said, in a silken-soft voice. "Nobody at all, not even the Matriarch. We have chosen and trained everyone honestly, and we are not taking anyone just because she happens to be Somebody."

That should have been that; and for a few seconds, as Jorn subsided into an agony of embarrassment and self-recrimination, it was. But then Ailiss O'Kung said precisely:

"Does that include the Director, Dr. Chase-Huebner?"

"Naturally," the physician said, without even blinking. "We could hardly do without him, after all."

"I raise that question, if you please," Ailiss said grimly. "I understand he has suffered a breakdown. Other people have been weeded for less. Do you still regard him as competent?"

"I do. That closes the question, I trust?"

"Not quite. Will you allow me to test him?"

The two women were now rigidly face to face in a furious locking of gazes whose import was totally beyond Jorn's understanding.

"For what purpose?"

"To confirm your assessment. Competence among crew members is my responsibility."

"You have often been wrong," Dr. Chase-Huebner said.

"Sometimes, often, never, I won't argue. Nevertheless, I am the psychologist *responsible*; you are not."

"Very well," Dr. Chase-Huebner said with a gentle smile, folding her plump, magnificently competent fingers together. "In that case, you are discharged. Let us proceed."

"At your peril, Doctor," Ailiss said, as though she were driving nails. Jorn had never seen her looking so downright ugly before; her mouth was white, her cheekbones stood out like flying buttresses, even her eyebrows seemed to have become blacker. "I think I know why you're now speaking for the Director, and why he has *not* suffered any breakdown. And why you have not extended the ruling you tried to make to include all the other . . . to include the rest of the crew. You're afraid of universal breakdown of . . . those elements . . . if you do promulgate that ruling; so you are going to take the Director along instead."

"I don't find such vague talk worthy of comment."

"You don't find it in the least vague, Hary't. Do you think that the Matriarch will stay home and die for her people once she knows the facts? In the face of . . . in the face of such wholesale ballasting of—"

"Stop," Dr. Chase-Huebner said, her face working. After a moment, she managed to become a little more composed. "All right, Ailiss, you may be right."

I agree that you should talk to the Director; on some points, obviously, you won't be convinced you're wrong until he tells you so. But in the meantime, this discussion is explosive in the extreme; it had better be closed."

Insofar as Jorn could read Ailiss' expression, she was about to agree to this baffling, inconclusive proposal; but she never had the chance. In mid-air in Ertak's office a siren groaned briefly, urgently, and on Ertak's desk, just to the left and directly in front of Dr. Chase-Huebner, the orange light went on.

It had never been on before. It would never go on again. It meant, very simply, that Dr. Chase-Huebner—and Director Ertak?—had already waited too long, and that even the *Haggard* would now never be finished.

The Sun, baleful though it had become, was still decades away from its last agony; but the cataclysm was upon them, all the same.

CHAPTER 5

THE truck was covered and there was hardly anything to be seen from it. Jorn and fourteen other crew members of the *Javelin* clung to the hard benches and craned their necks around each other, trying to peer out the back over the tailgate; but at first the administration building blocked off the view, and then the driver was careening across Salt Flats at a pace

which made visibility less important than just hanging on. It was maddening.

All the same, a general distant roar of human and machine sound, massive and ugly, came rolling clearly over the snarling of the truck's own engine. If the sputtering of gas guns was a part of that clamor, it could not be distinguished, at this distance, from the boundary fences; but there were louder explosions too—explosive bullets, grenades, even an occasional mortar.

It was hard to believe that any sort of a mob could have gathered outside that fence, in the middle of one of the most forbidding deserts in this entire hemisphere of the world; but that was what the orange light had been triggered to foretell. And the fact that the mob was already here—and that the truck was already racing for the *Javelin*—could mean only that it was huge, armed, and at least partially organized.

And it also meant, Jorn was fervently sure regardless of the evidence, that somebody—a great many somebodies—had badly misjudged Jurg Wester, and the likes of him.

The flickering night framed over the tailgate of the truck was streaked briefly by the track of a rocket shell. The concussion from the tank-killer hung fire long after the wake of the little missile had vanished, and its residual image after it; and then, *blam*, there it came, from somewhere in the middle dis-

tance. Obviously it hadn't been aimed at the truck, which in any event was showing no lights; but it left behind no doubt that the mob was armed. Of course at this speed a tire blowout would kill Jorn and everyone else almost as instantly—

The tires screamed and the truck, yawing and lurching, slammed down to a dead stop, piling all fifteen of them up against the back wall of the cab. Accompanying the yell of brakes and tires was the awful grinding, pounding note of gears being stripped: the driver had shifted down into first in order to stop shorter than the brakes could manage alone, trusting to the crew's field gear to protect them and her own skill to pocket her.

They were still trying to unscramble themselves from their own swearing black homologous knot when the tailgate clanged down. "Out!" a woman's voice shouted. "Hit that lift! Lock closes in seven minutes! Move!"

Jorn recognized the voice. It belonged to the armorer. Well, that explained the drastic driving. She was waiting for them as they unscrambled and struck turf, carrying a hooded torch further hooded by her gauntlet, between two fingers of which she allowed only a razor-edge of red light to shear at the ground. Even in the dim monochrome, however, Jorn could see that she was bleeding a black rill from one nostril.

For an instant thereafter he was totally confused. Then, against the starlight, he picked out the colossal shaft of the *Javelin*, sweeping motionlessly into the sky as though she would never end. Beside her, seemingly clinging to one long dully-gleaming curve, was the delicate scaffolding of the elevator, waiting to be extinguished like a flame at the moment of takeoff.

"That way," the armorer growled, "*that* way." She gestured along the sand and salt with the razor-edge of the torch; but Jorn was already running. He could hear others behind him. Far away, something—a bomb?—burst open with a deep, heavy groan, and a minute temblor shook the desert under his pounding feet.

Then the aluminum deck of the lift car was ringing with the trampling of boots as they charged aboard, shoving each other and grabbing for cables or struts they could only guess were there. "... thirteen ... fourteen ... Now by the Ghost ... All right, get in, dammit, *fifteen!*" A whistle warbled shrilly, almost in Jorn's ear. The cab shuddered, and then, without any pause, lurched skyward with a muscle-wrenching jolt.

After that, it did not seem to be going anywhere at all, despite the piercing, unpredictable screams it sometimes uttered against its guide-rails, and the jittering of the deck beneath their feet. Nevertheless it was

rising, and as it rose, Jorn could see more and more of the outskirts of the base. Now they were seething with light and smoke, all along the perimeter. Tracers criss-crossed the hot night air in all directions. The higher the car inched, the more likely it seemed to Jorn that everyone on it would be riddled before they would be able to reach the faraway airlock of the *Javelin*.

Then, ages later, they were high enough to begin to see the general shape of the attack. It was huge. Beyond the immediate, writhing lines of fire along the fences, twinkling processions of vehicles were racing in nearly straight lines over the desert toward Salt Flats. Near the horizon there did indeed seem to be some bombs falling, and some of these small "nominal" atomics. Evidently the government still controlled the air—which was good as far as it went, but the planes would be under strict orders to stay well away from the ships, where the main part of the mob obviously was concentrating, and hence the only place where a really comprehensive explosion might be decisive.

The lift quivered and rose a little faster. It brought them all high enough to test their handholds with a heavy buffeting of wind—though the wind seemed to be just as hot as the air on the desert itself had been. There would be no more cool winds on this planet, not at any altitude at which a man could expect to

breathe, not even on the mountains.

Another rocket shell went searing past in a high hazy arc. Jorn stopped breathing for an instant. That one *was* close. Didn't they realize that they might hit the ship itself? For that matter, didn't they know that they couldn't pack all of those thousands of people into the *Javelin* and her sisters? Didn't they know that they'd wreck her, just trying? Sure, there were three other ships standing on Salt Flats, but—

But as he realized the futility of trying to think like a mob, his mind repeated, "*thousands* of people," and quailed. That mob was being held off only by the stand-bys and there were very few of those any more, certainly far from a full extra crew for each ship. They had been weeded; and judging by the rocket shells, many of the rejects were now howling on the other side of the fence. Despite the standby training, and the supernal lethality of their gear, the stand they were making was suicidal. They would *have* to fall back, or—

But they did not fall back. Not this time.

They were broken open.

About two miles northwest of the administration building, the line of flame sagged inward. Then it went dark along at least half a mile; the fence was down. Outside, there was a flaming surge of movement toward the

hole like surf foaming around a whirlpool.

The cab came to a bouncing stop in the middle of the sky.

"All right, inside!" the armorer shouted. "Lock closes in one minute! Inside—shuffle or dust!"

Had that whole crawling ascent been only six minutes long? But there was no time for post-mortems. The sixteen of them were packed into the lock like fish in a jar, and the outer door swung ponderously, unfeelingly shut on the battle and on the whole outside world . . . for good.

As it sealed, a hairline semicircle of light, intolerably brilliant after the near-blackness of the field, began to widen on the other side of the lock. Jorn was momentarily startled; it had not occurred to him that the interior of the ship might be fully lit—although, since she had no ports, there was no reason why she shouldn't have been; and besides, her passengers had been living aboard her ever since she was finished. In the first influx of light he was startled to find Ailiss O'Kung standing next to him, white and sweating with strain.

"Very good," the armorer said, a little more quietly, but not much. "Posts, ladies and gentlemen. And thank you."

Proper enough, Jorn thought deliriously, since the armorer was the only one in the party who was not an officer. Still the speech had all the irrationality of a dream.

Everything had been re-

hearsed over and over long before this. Jorn headed for the control barrel almost by instinct, Ailiss trotting by his side. In the big blinking cavern he ran a fast tally of his navigation section and found them there; he did not stop to count Ailiss' crew, but he had a vague feeling that she was at least one officer short.

Ertak was there, hunched in the command chair above them. That was his right, since the *Javelin* was the flagship. But it was the first time that Jorn had seen him in five years; it increased the dream-like feeling.

The Director did not turn around. He did not even seem to hear what was going on behind him. After a moment, however, he spoke into a chest microphone, and all the desk screens came to life, including Jorn's own. Once again he had a view of the scene outside.

It no longer really looked like a battle, but more like a carnival, confusing, gay with light, without real meaning. Nevertheless, from this height Jorn was able to see that a miracle had happened around the breach at the fence. Somehow, whoever had been generalling the defense had managed to pinch off the inflow, clean up the stragglers, and order a retreat. The irregular closed curve of fire, curiously amoeboid, was well inside the fences everywhere, and drawing closer and closer to the ships; but it was still unbroken.

Beside Jorn's right hand he

heard a razzy muttering, and reached guiltily for his operations helmet. Inside it, Ertak's voice was saying:

"... and maintain routine identification signal census in a continuous cycle. Field officers, continue to hold ground by the *Haggard* and the *Assegai*; they both look finished and we want the rabble to assume that they are. On Signal Red, flatten out toward the *Assegai*; on Signal Blue, let them have her. Lifts are down on *Javelin* and *Quarrel*; repeat, lifts down on *Javelin* and *Quarrel*... Congratulations, Deep Station. To all hands: Deep Station reports it has secured all five ships. . . . Census? Census, report! . . . Field officers, Signal Red, this is Signal Red, execute. . . To all hands: Deep Station is launching . . . Census? . . . Field officers, supersede previous orders. On blue signal, yield both *Assegai* and *Boomerang* and fall back toward *Javelin*. Fall back toward *Javelin*, we will be last off. . . Attention *Quarrel*, cycle airlock and begin countdown; we won't need you for personnel."

The line of fire bulged inward toward the *Javelin*, and then toward the incomplete ships. Then there was an even deeper bulge toward the *Quarrel*.

"Field officers, blue signal will be on count of zero. At the signal, yield the field and board the *Javelin's* lift. One minute allowed for boarding, repeat one minute. Counting toward blue

signal: five . . . four . . . three . . . two . . . one . . . zero, Signal Blue! Signal Blue!"

The line swept inward on all sides—and then suddenly it disappeared utterly. There was no longer even a part of it to be seen. Instead there were only the torches and vehicle lights of the mob, pouring inward toward the three ships they thought they had gained. In a barely perceptible flickering of small-arms fire, what little there was left of the standby crew funnelled toward the lift shaft of the *Javelin*, trying to disengage.

"Census, I have pips for twenty-one survivors and a load estimate of eighteen on the lift. Confirm, please. . . . All right, nineteen now. Time's up. Lift crew, haul them. . . . Absolutely not. *Quarrel* will leave in six minutes exactly. If we wait for three stragglers, all twenty-one will die. Haul!"

A minute went by. The mob continued to concentrate around the bases of the "captured" ships, like phosphorescent ants, until each of them seemed to be standing in a spreading pool of light. The pool around the *Boomerang*, however, quickly began to seep away toward the others; close up it was self-evident that that ship was radically incomplete.

"To all hands: Deep Station has launched all five ships. We have garbled reports from other stations indicating at least eighteen more either secured or al-

ready launched. There are also still two stations holding radio silence; we are hoping this means that their locations remain unknown and they are undergoing no attack."

Three minutes.

"Passenger census . . . Well, that's what they get for sight-seeing; we warned them. Certainly it could be a lot worse. . . . Airlock crew, prepare to admit standbys."

Nobody could call them standbys after tonight.

Four minutes. There was turmoil now in the pools of light around the *Assegai* and the *Haggard*. Little sparks of light were clambering slowly up the scaffolding of their lift-shafts; obviously they had discovered that the lifts themselves were inoperable.

Five minutes. The airlock was open now, gaping for the nineteen seared heroes. The mob was beginning to ooze tentatively toward the *Quarrel*.

". . . seventeen, eighteen, nineteen. Cycle airlock. Field officers, welcome aboard. Get that thing closed, *you've got four seconds—*"

Thoommmmm!

The *Quarrel* vanished. On Salt Flats the pools of light were still visible, but they looked dimmer, and completely frozen: truck lights left on, torches fallen from hands. . . . The concussion had probably killed many of them. The rest would be likely to be still unconscious when the *Javelin* left.

"A clean takeoff," Ertak's voice said calmly. "Ship's officers, begin countdown. We will follow in eight minutes." He paused and seemed to check some board hidden by his chest. Then he added, "To all hands: congratulations. The *Javelin* is the last ship able to leave, and the last of these still on the ground. Twenty-nine others are all already on their way."

Thirty ships, Jorn thought numbly. Thirty ships.

"Correction, we are thirty-one in all. We have a signal from the *Kestrel*. She is damaged but off safely."

There was a ragged cheer in the earphones. Jorn did not join in it. What difference could one ship make? What difference would ten have made?

"Census . . . thank you. To all hands: we now have a final population check. We are carrying seventy-five thousand people, give or take about a hundred. We have escaped—and by that token, we know that we will survive. Take-off in thirty seconds."

We have escaped . . . we will survive. And yet . . . how many died when the *Quarrel* vanished, and the lights were stilled on Salt Flats? How many more would die to the departure of the *Javelin*? How many had been killed to keep them out of the ships, all over the world?

We will survive. But who are we to survive?

Doubtless some such question was on many minds, but the first

month of flight afforded nobody any time for brooding, least of all Jorn. Like all the officers, he was standing two watches out of three, and hit his bunk so exhausted that he frequently went to sleep while still in the midst of removing his clothes.

The chores involved in part emerged from the *Javelin's* role as flagship of the fleet, hence responsible for its overall direction. The time would come when the expanding cloud of ships would be too tenuous to keep such an arrangement practicable; but in the meantime, the fleet could not be permitted to hurtle off in thirty-one random directions, toward obviously unfruitful or even overlapping targets. Most of the burden of reducing this chaos—a natural outcome of the sudden take-off—to some desirable order, or rather, to a set of such orders, fell upon Kamblin and Jorn; selecting the final order and imposing it was of course Ertak's function and duty.

For the most part, however, the burdens were simply a part of the shaking-down process; every ship in the fleet was having virtually the same experience. Boarding and take-off had been disorderly at best, entirely contrary to plan at worst. Some ships were seriously understaffed; some almost bulging with last-minute refugees. Only the ten ships whose ground locations had remained unknown had exactly the complement of passen-

gers, stand-bys and crew that the plans had called for. A number of the ships were damaged, some only slightly, some seriously.

In particular, the ship's day did not begin without the question as to whether or not the *Kestrel* was still on course. Almost a third of her was useless, and into the remaining two thirds was packed an appalling press of humanity—for she had been the only ship of the five at her base to get away at all. Ertak had twice counselled her captain to turn back, each time to be refused. Jorn could hardly blame the man; between the probability of death in space, and the absolute certainty of being pulled to pieces very slowly after returning home, the choice was narrow but clear. Evidently Ertak thought so too; at least, the Director did not take the risk of turning his recommendation into a direct order.

Finally—and about this there was precisely nothing that could be done—there was the ineluctable fact that the ships had not been designed to do what they were now being asked to do. Coping with their deficiencies as arks was an obviously impossible task, and yet one which had to be faced every day, day after day, end without world. The *Javelin*, since she was the prototype of them all, was the worst ship in the fleet in this respect; but even the most recent, the *Peregrine*, could boast of very few ameliorations of the prob-

lem. Jorn hated to think of what daily life aboard the *Kestrel* must be like; luckily, perhaps, he had no time to.

Yet even in the midst of all this feverish, desperate activity there was a common emotion, brooding over everything, difficult to label yet so palpable that Jorn could almost imagine himself breathing it in with the air. People's faces had no expression; as though they had withdrawn almost wholly into themselves. Conversation between crew members was limited almost entirely to duty matters and technicalities, even at mess.

The work load slackened significantly after the first week of the second month, but there was no visible change in mood to go with it. If anything, the silence became even more intense. In part, Jorn was sure, each man and woman was thinking of the tragedy at Salt Flats, and the single enormous fact that all those had died so that these should live. They were the elect; and Jorn at least could not rid himself of the feeling that many of them, surely including himself, owed their election to chance... or worse. Though he had never understood the meaning of the Ertak affair, the very presence of the Director constantly hinted at some still-uncategorized corruption; and if corruption were there, where else might it not be found?

And elected for what? No one

could say. The *Javelin* was outward bound for an unknown destination, on a journey of unknown length in both time and space: a frail steel bubble which might be washed up on any shore... or burst tracelessly, so far into the wastes that not even a fragment would ever reach any beach, without even the dim solace of a sea-bottom grave to sink to, but only nothing, nothing at all... For this they had given up everything that had given their lives continuity and meaning up to now; and even where, as with Jorn, those lives had seemed unrewarding to the point of meaninglessness already, there was something about being uprooted forever that made even the stoniest of soils worth mourning. There was a song, a very old one:

*When I was a pup, I lived in a hut,
My father was a drunkard, my mother was a slut,
And oh, my love, how the rains came down;*

*We had not to eat, neither bread nor meat,
Not a rag for our sores, nor shoes for our feet,
And oh, my love, how the rains came down;*

*Take a fortune for your fee, it's no matter to me,
For last week I journeyed that hovel for to see
And oh, my love, how the rains came down;*

*It was burnt to the ground; not
a cinder to be found;
And I fell upon my knees, as I
had a mortal wound,
And oh, my love, how the
rains came down!*

He had, he realized, never understood it before.

And yet behind them their sun still burned, only a point of light now but still the only star in their sky with a magnitude greater than -2. As the months went by and they gradually forgot the insane storms and the blasting heat of their last year at home, it seemed less and less credible that so immemorial a friend and companion might explode. Everyone knew that the explosion was supposed to be decades in the future; some few of them even knew that there was doubt as to whether or not the ships could be far enough away from it to be safe, even after all that time in which to flee at ever greater velocities. Yet there the Sun shone still, as always, unchanged except to the photographic plates and diffraction gratings of Kamblin and his assistants, who kept their own counsel.

The reaction was inevitable. Within another two months, the unrelieved gloom of the shake-down period was gradually transforming itself into its opposite. It took the form of an almost childish interest and delight in the total novelty of the new life, both in its abstract,

scarcely visualizable goals and in its intimate details. Some of the passengers, and many of the officers and crew, even became interested enough to feel disappointed that the *Javelin* would not, after all, pass anywhere near the grave of the old nova which had played so crucial a role in history. (The ship was, in fact, going almost directly away from that unquietly dead star. Ertak was following a Great Circle in the galactic plane, counter to the direction of rotation of the lens as a whole, hoping to take at least a little advantage of the contrary motion to increase the number of systems the *Javelin* might encounter. Since the ship had shared that rotation on take-off, it would be a long time before any such gain could begin to show.)

Steadily the new mood grew stronger. If leaving home had been death, then perhaps this was rebirth, with all its hopes of avoiding past mistakes.

Those on the bridge also had the diversion of the Grand Log. It had been agreed long ago that every ship should keep a common fleet log, as well as a log of its own; so that when some ships were destroyed or lost—which everyone knew to be inevitable, though it would not happen to *their* ship—the unique records might not be lost with them. This entailed a great deal of inter-ship chatter—much more, in fact, than was strictly necessary: everyone involved

realized that this kind of fraternization was not going to be possible for more than a few years, even with the Ertak communicator. The globe of ships was growing too fast.

Almost nobody listened to any messages from home, though those, since they came in by radio, would be cut off much more quickly—as soon as the *Javelin* passed the speed of light, as she would by the end of her first year in space. But the new mood was too fragile to test with the corrosions of whatever was being broadcast at home, even with that large majority of messages which were not intended for the fleet at all.

Kamblin, however, listened; he had to. Eventually, he was forced to ask Ertak to call together the officers for a report.

"I won't burden you with any specifics about content, since I'm pretty sure you don't want them," he said. "But the changes in the Sun are going rather faster than I had anticipated, and I couldn't account for them by any solar process; so I had to have recourse to the radio to see if they were real, or just an artifact of the time-velocity relationship."

"And are they?" Ertak said, startled. "I certainly would have predicted that they wouldn't be."

"But they are, Director. It's lop-sided and I think I can show you why; there is no accompanying mass effect, and having

found that out from theory in advance, you must have assumed that the contraction equation was meaningless under the conditions of your drive-field. I made that assumption too, but with the evidence now in hand, I can see where the error lies."

"What does it mean for us?" Ailiss asked.

"Right now, all it means is that the radio broadcasts from home are beginning to sound a little tinny, despite the fact that they should sound *lower* in pitch the faster we go away from the source," Kamblin said. "But it will mean a good deal more than that to us later. I'm still uncertain of the exact figures, but it looks as though the accumulated error will be about thirty per cent."

Ertak nodded, but Ailiss said promptly, "Sorry, I'm not reading you. Error in what? Which parameters are you filling?"

"Real time and acceleration," Kamblin said patiently. "Here, look at it this way. I set the date of the explosion at about forty-five years after take-off. That's when it will happen, back home. But for us, time is gradually speeding up. For us, the explosion will happen about thirty-one years after take-off."

"Oh. Well, that still seems to be a fair distance in the future. And we'll be just as far away from it as we thought we'd be, if it's only a relativistic effect."

"It isn't only a relativistic effect," Jorn said suddenly.

"It's either that or it's *entirely* meaningless!"

"Easy, Ailiss, that isn't what he means," Kamblin said gently. "I don't think he's talking about physics now. What is it, Jorn?"

"Well . . . It's going to be bad for us. It means that the people home are going to seem to have less time, too, from our point of view. I can't do contraction equations in my head or I could tell you how much less."

"Don't try, I know already," Kamblin said. "The effect is small on this end of the curve, this early. For us, it will seem that our planet will die after we have been about three years in space—instead of the predicted four. And we've been out nearly half a year already."

"And you've been *listening* to them?" Jorn whispered. "It must be an inferno back there."

"It is wholly horrible," Kamblin said grayly, "and it will get much worse. That's why I bring the matter up now. It could have waited, otherwise. But in view of this, it seems to me that the general cheerfulness on board ship lately is not only unwarranted—it's extremely dangerous."

"It is," Ertak rumbled. "It is. But there's one thing about it that's absolutely certain: It won't last."

"Give them a little time to reflect and the hopefulness will give way to despair and then—well, mark my words the cheerfulness won't last."

AND of course it did not. As the year stretched out toward its end, bringing closer the moment when nothing more could be heard from home thereafter, more and more people began to vote in the ward-rooms to hear whatever was coming from there. Kamblin had suggested that access to those broadcasts be confined to the bridge, but the Director overruled this, for reasons he did not see fit to explain.

The messages all came through originally in a high, disquieting chittering which had to be recorded and played back at well under its reception speed to be intelligible at all. Even then, not very much than anyone could comprehend came through. Entertainment broadcasting had long since died, that was clear; now nothing was being transmitted but routing orders, pleas for help, hard news in hard codes, and other matters of official business whose purport could not be riddled. The tropics were gone, scorched to the ground, and the temperate zones were afire in many places. Those who remained alive huddled at the poles, dying of heat prostration and starvation in about equal numbers, under skies permanently black with smoke.

Incredibly, there was a war on between the two poles. Nobody could guess what they had found to fight about. They no

longer seemed to know themselves.

And yet, and yet, in some unguessable crypt of this blistered, blackened, burning world, there was a sane man—

The signal was quite strong compared to the others, and directional. Furthermore, it was slowed by just the necessary amount, so that it first came through as a strange groaning noise, and had to be picked up direct instead of on the tape. It said:

"Calling the Interstellar Expeditionary Project. Don't try to reply, I'll never hear you. If my figures are right, you're about to cross over the speed of light. May the Ghost bear you in His hands. If you find any worlds, make a better job of them than we did with this one. Can't say any more but will set this to repeat—"

Then there was a heavy explosion, powerful even at this enormous distance; and a woman's voice, screaming:

"Thought you'd get away clean, did you? Thought we couldn't find your little spy's den, eh? Somebody kill me that traitor!"

A crackle and hiss of shots; a groan; the laughter of several people, sex not determinable; retreating footsteps, somehow unsteady. And then, another groan, and the slow, slow onset of terminal breathing.

He took a long time to die. Then the recording began again:

"Calling the Interstellar Expeditionary Project. Don't try to reply, I'll never hear you . . ."

Somebody, surely, should have turned it off. Many left the ward-room at their second hearing of the woman's voice; many more after the man died a second time. But there was still a little knot of listeners around the public-address speaker when, eight repetitions later, the *Javelin* crossed smoothly over the light barrier and the broadcast slid downward sickeningly into eternal silence.

And with this, Jorn realized in a gray mist of horror, their flight had actually begun.

If Ertak had thought that the reaction might include some form of violence, he did not get it. The shock was too great for that. The response was more than just the old depression come back full force; for not only did the broadcast bring home to the *Javelin's* people the full horror of what was happening back home, but it was known to be the last message the *Javelin* could receive from there . . . until the Ultimate Message of the explosion itself. Thus with the gloom there came back guilt, tearing at the liver like a bird of prey.

Not that anyone could sensibly believe himself responsible for the heat and the smoke and the war and the insanity. Nevertheless, the fact that those on the *Javelin* were no longer there

to share these things brought with it a sense of responsibility which reason could not shake off. It was the feeling of having gotten away with something, and hence accompanied, as always before, by the conviction that punishment could not be deferred forever—and probably was imminent.

This time, however, though it was much more intense, it did not last so long; the distractions, their way smoothed by habit, took command more rapidly. Neither the depression nor the guilt vanished entirely, but it became possible more and more to ignore them. Time was going about healing over the wound; there would of course be scars, but it was no longer acutely painful, diminishing first to a chronic twinge, then gradually into an ache, and from there into an unsensed emotional disability which was its last and lasting residue.

In this they were helped by the *Javelin's* steady acceleration, which had already brought her well past twice the speed of light. It was no longer possible even to see the Sun, except with complex instrumental systems depending upon the Ertak Effect which were available only in the control barrel. These consumed significant budgets of power, easy to provide the fusion generators but not at all easy to handle, and Ertak saw no reason—nor did anyone else on the crew—to make such spe-

cial glances backward a part of the general transcasts to the ward-rooms. Mostly, nobody needed them but Kamblin. They were not missed.

And again, coping with the exigencies of shipboard life was bound sooner or later to take precedence over any abstract emotion, no matter how powerful; it was immediate and minute-by-minute, the commonplace and tragic treachery of daily living to grand sorrows and grand loves alike.

There were, for example, many more women among both passengers and crew than had originally been planned. They had been packed on board, in the plans as well as in fact, at what had been effectively the last minute—that is to say, when the Interstellar Expeditionary Project had been converted into a survival armada—for the same reason that the IEP had first planned to include women only among the officers: because they were regarded as too rare and valuable to risk suicide. Originally, it had been very clear, the IEP was to have been like the usual interplanetary probe in this respect: something that one threw away drones on. Jurg Wester (and where was he now? a carbonized mark among many on the floor of the furnace that had been Salt Flats?) had been right about that, as about some other things.

Because of this change in plans and procedures, the wom-

en on board the *Javelin* had far less privacy than did the men, despite every attempt at rearranging the ship, simply because there were fewer facilities of all kinds available for them. This drawback was in addition to the fact that there was very little privacy available for either sex, or for both as a unit. There were few corridors anywhere in the ship; they had been torn out. Cabins, where they existed at all, simply gave on other cabins, so that in proceeding from one task to another one was constantly forced to happen upon and bull through the most personal kinds of scenes. This was so commonplace that even the habit of apologizing for it was dying out, and the habit of seeking privacy, though much more stubborn, was dying away in its wake. There was a theory current aboard ship that this kind of physical openness—and it was not merely erotic, but included everything from scratching to plumbing—was good; but it was equally easy to find partisans of the opposite view. One aspect of it, however, was undeniable: it was fatal to sexual possessiveness and jealousy. The customs of some five centuries back, when love-making had been regarded as often a team sport and almost always a spectator sport, were undergoing an obvious renaissance on board the *Javelin* (though the fact was not read into the Grand Log, nor was it reported from any other ship in the fleet; as usual, the

letter was showing itself far more durable than the facts).

It was also gradually becoming evident, as the calendars ticked inexorably on, that it was true that males are more adept with machinery than females are, despite the vast number of women in the past society who had made successes in engineering and other mechanical trades. Even in the fabric of that society that assumption had been built firmly, for it had been standard, as Jorn himself exemplified, to give a surplus male an engineering education. The theory was that if such a male were ever needed in a hurry, he would be most likely to be needed for that sort of task—or, at the least, that that was the best one could do toward training him to be proteanly useful. This had seemed to be a workable arrangement in the relatively static matriarchy—though its long-run practicality would now never be known, for the matriarchy had been the first society of its kind in the history of the world, and it had been young when it died—but that whole balance was now completely upset. Aboard the *Javelin* the males were rising ineluctably into the ascendancy. They were, first, suddenly in short supply to service the mechanical details of ship life—and almost all the important details of ship life were mechanical in the broadest sense of the word, ranging from apprentice ship's electrician to

Ertak's ability to handle complex mathematical abstractions as though they had some bearing upon real life. ("A female mathematician is historically as unlikely an object as a female composer," Kamblin had once observed—privately—to Jorn. "There've been a few of each—but never a good one.")

This was no longer a theory, but a fact of the situation in which they all had to live, and upon which all their lives depended. Nevertheless many of the women aboard the *Javelin* found themselves unable to adapt to it. Time after time, in large matters as well as in small, they were betrayed into revealing that they still thought of themselves as part of a power elite, definable simply by gender. It was often annoying, sometimes infuriating, and once or twice had been actively dangerous; yet in retrospect Jorn found that he could not remain indignant for long. It was hardly their fault. After all, they had been born and raised in a society where they *had* been a power elite, as he had been born and raised in one where he had been something not much better than trash. That kind of deep, irrational conviction is notably difficult to unlearn, and in fact is never unlearned entirely.

Nevertheless shipboard society, as a new society in itself, was showing increasing signs of strain from this source. The passengers were the first to feel it, since they had relatively less

to do with their time (though they were by no means idle—no one could be). The first sign was a sudden surge of covert and then open promiscuity, followed by an equally sudden outbreak of family realignments, the latter usually signalled in advance by midnight scuffling and snarling and morning black eyes. At this stage the strain was not so noticeable on the bridge and in the control barrel, but it was there, and growing.

It grew steadily as time went by, daylessly, nightlessly, but without let or surcease. In the five years—could that be right? Yes, incredibly, it had been that long—since the light barrier had been broken, not a ship in the armada had made an even slightly promising planet-fall. There had been false alarms, but even those were growing rarer, as the ships' computers learned by experience. The keeping of the Grand Log became a duty, and then, finally, a positive chore; there simply was no longer anything interesting to report, except for scraps of astrophysical data which held meaning only for Kamblin and his counterparts elsewhere in the fleet. Otherwise, what each ship found to say was very much like what all the others found to say. The entries became steadily shorter, the attendance at the transceiver more and more perfunctory; often, now, what was written down in the Log was not the full text of

the message, and sometimes the message was not entered at all.

"Birn, just what are you doing now?" Ailiss' voice snapped down from the RF bridge. "Trying to figure out what thirty per cent of three is, again?"

"I was thinking," Jorn said slowly.

"Well, do it on sack time. I need those fleet angular momentum corrections *now*."

"They've been on your clipboard for the last twenty minutes."

"Um. Oh. High time. Well, find something else to do. Something *productive*."

Jorn suppressed a retort and bent to faking a job. She had caught him during one of those brief periods—once rare, but they were becoming commoner now—when he was ahead of schedule; but he was not going to let the matter turn into another session of snapping and snarling over nothing if he could help it. He had had more than enough of those already.

Ailiss O'Kung was in fact tolerating the strains of the new society rather more poorly, on the whole, than Jorn would have expected. Jorn found the reaction thoroughly unpleasant. Perhaps the only compensation to be derived from it from his point of view—and it was mainly a gain only for his curiosity, though it did slightly increase his respect for Ailiss at a time when he had lost almost all other traces of it—was that through these quarrels he managed to

learn something about her background. She had never let a scrap of that kind of information slip out during the training period, and thereafter there simply hadn't been time, until now. What prompted her suddenly to volunteer what she had so long withheld was unknown to Jorn, but it was his guess—and a good one, he suspected on very little evidence—that she felt forced by her situation into using it to hold her emotional "altitude," not only over Jorn, but in the whole heirarchy of the shipboard peck-order.

And she had been indeed highly placed back home: a scientific attache to a member of the Matriarch's cabinet, and the youngest person of either sex ever to hold the post. She had surrendered it on her own initiative to join the Project, which had had no such high place to offer her, though to be sure it had placed her as high as it could.

This was admirable, doubtless. But it was no longer of any moment: an empty title in a discarded history, without bearing on the world of the *Javelin*. That Ailiss referred to it at all now meant only that she had failed to reconcile herself to the deprivation of power, and the reversal of status, which she herself had engineered. In this, though perhaps she was an extreme case (or perhaps not), she was far from alone on board the ship; the affliction was as

general among the women as a low-grade contagion, and it was ever present.

Their third major enemy, as Jorn was coming more and more to appreciate, was time itself. The median age on board the *Javelin* was slightly over forty. This meant that there were a few babes-in-arms (though more were arriving all the time) and a very few elderly people of both sexes, but that most of the population clustered around middle-age or younger—so closely, in fact, that the average age was a good six years under the median. Life expectancy had stabilized back home, many decades before the present debacle had even been suspected, at around a century for males and between 115 and 120 years for females; and though the hazards of interstellar travel, both known and unknown, could be expected to cut those figures somewhat, there was a general awareness that this kind of communal, cooped-up, low-reward living, with all its sensory deprivations, disorientations, boredoms, frustrations, offenses to the aesthetic sense, and inescapable personal frictions might go on for many decades to come. Indeed, in view of the lack of success of the entire armada thus far, it might constitute all that was left of life, perhaps for generations to come, perhaps—who could tell?—forever.

But they had had the firmest of reminders that even this was

better than death: the fate of the *Kestrel*.

It had been assumed throughout the rest of the armada that that problem had settled itself. It had not; it remained exactly what it had been before; but the urgency had gone out of it. The packed masses aboard the *Kestrel* had come to the only terms possible with the intolerable kind of life their damaged ship forced them to lead. The *Kestrel* was still with the expanding sphere of ships, a sort of stabilized slum without hope of relief or rehabilitation . . . except by a planet-fall which the *Kestrel* would probably be unable to handle.

Then, in a period of hardly more than three weeks, the inhabited part of the *Kestrel* was gutted from end to end by pestilence.

Maddeningly, the disease was wholly familiar. It was nothing more than one of the twenty-odd known forms of the white death. Yet none of the measures that the *Kestrel* could take, nor any recommended by Dr. Chase-Huebner or any other physician in the fleet, seemed even to slow it down by more than a day. Familiar though it was, the micro-organism responsible had evidently undergone a drastic mutation in the only part of its metabolism that counted: it was totally resistant to anti-bacterial drugs. And since the *Kestrel* was now twenty-five light years away from her nearest neighbor

in the fleet, there was no help that could be offered her except useless advice. The end was inevitable.

Suddenly the Grand Log was an interesting document again.

There were some survivors—nothing in biology ever happens 100 per cent, not even death—who had every hope, according to Dr. Chase-Huebner, of being immune henceforth. But from the *Kestrel's* preceding situation, where she had had far more people aboard than she could keep alive—as the pestilence had belatedly but conclusively proven—the ship had been cut back to so small a complement that they could not even help each other in their convalescences, let alone operate the *Kestrel* herself. In addition, the survivors were unselected. Surveying their losses, and particularly their losses in terms of skills, the survivors set about shutting down most of the rest of the ship. This was for personal survival only, and for the sake of a few possible children in the future, for the *Kestrel* could never make a planetfall now. Grimly, the survivors set about making her instead into a planet.

But they failed. The food went first. They still had a fusion engineer, who promised them that she could make them anything they needed out of the hydrogen sweepings of the interstellar gas. But by this she meant chemical elements, which can indeed be made by simple, straightforward atomic proces-

ses if only enough energy is available; and the *Kestrel* still had the energy. Putting together chemical compounds like protein molecules, however, is of an altogether higher order of complexity, and there was no one left aboard the *Kestrel* who knew how to program the computers who had handled this task before. An attempt to do it by the handbook poisoned half the pitiful remainder, including the only man capable of servicing the ship's one remaining electrical converter; the fusion engineer had always thought simple electricity beneath her notice. The temperature began to drop; the air gradually became foul; and starvation followed after in the cold black caves. The fusion engineer locked herself in with her little sun, and spent her time synthesizing torrents of undrinkable water. Sometimes she could be heard singing.

The prospect of having to listen to this process going to completion, and entering it duly in the Grand Log, was almost too much for anyone in the control barrel of the *Javelin* to bear, though it had its fans in the ward-rooms; but they were spared this. Among those aboard the *Kestrel* whom the plague had passed over, there was evidently still one brave woman . . . or man.

The *Kestrel* ceased to exist. No one saw it go, but suddenly it was gone, beacon, carrier wave and all.

Exactly what happened could never be known, but all the same there was hardly any doubt about it. Someone had had the ultimate courage to blow up the ship.

"But could so few people do it?" Jorn asked, afterward.

"One person could do it," Ertak said somberly. "That's the penalty that complexity pays. It takes thousands of people to keep an enterprise like the *Javelin* alive; but only one man can kill it . . . if he knows how."

Jorn shuddered, "I wonder. . . ."

"Um. What?"

"I, I was wondering if I'd have had the nerve. The Ghost ward him, whoever he was."

"Yes," Ertak said abstractedly, shifting his shoulders as though they were a burden to him. "Or whoever she was. But there's more to it than that, Birn. Do you realize what a hole this leaves in the flight plan? I never did think that the *Kestrel* would be able to bring off a landing if she found anything promising; but there were three ships in her vicinity that could have been diverted to any promising target she sighted, at least at any time during the next ten years—one of them the *Dart*, which is in near-perfect shape. But now that's no longer possible. And yet the one inhabitable planet that we're all seeking might very well be along that radius of expansion from home. With the *Kestrel* gone,

that planet will never be discovered—not by our race, anyhow. That's what's giving me nightmares."

Jorn swallowed and excused himself. There were times when the Director seemed to him to be utterly inhuman.

"What's the matter, Birn?" Ailiss said from the RF bridge, as he resumed his post. "Director dress you down?"

"Oh, shut up."

"Mind your tongue!" she said, turning quite white. "I've had about enough insubordination from you. I could use a navigator who doesn't have to count on his fingers—and by the Ghost if I get any more lip I'll go recruit me one."

"You give me a great big fat blue-green fuzzy frozen pain in my starboard rump, Apprentice-Admiral O'Kung," Jorn said, hunching forward over his desk and glaring up at her. "My math is better than yours and always was, and you know it. If you can find a better navigator, go ahead—I'd rather rub bright-work than be the kicking-boy for your twitches any longer."

"One word more, and—"

"Down, girl. If you don't like it here, go back where you came from, but *lay off me*—beginning right now. I didn't volunteer you out of your attache's office. If I could, I'd volunteer you right back into it before you could draw another breath. Especially since it's a little bit on fire by now. But lay off—or lie down, I don't care which."

Ailiss' distorted mouth was opening and closing rapidly, but not quite completely, like a singing bird's, but no sound came from it but a sort of hoarse hiccup. This one, Jorn thought detachedly, is going to be a beauty when she finally gets it out. He didn't care. He hadn't enjoyed himself so much since he had kicked Jurg Wester out of the armorer's office; which had been—when?—some time before the last glaciation, probably.

This was the end, that was for sure. From now on they would never be able to work together again, not even by exchanging frigid monosyllables on the job and otherwise ignoring each other's existence. If they were even to try that, it would inevitably lead to a technical fiasco, and thence, if they persisted, to a catastrophe; each of them would be trying so hard to make the other look incompetent, or to inflict even deeper hurts, that the job would be perverted almost totally into a weapon. Better to

give it up, before innocent people got hurt . . . or the *Javelin* went the way of the *Kestrel*.

All right, so be it. It was all unreal anyhow. Anything to get this obsessed young woman off his back. He hoped he would like polishing brightwork.

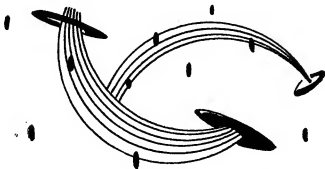
Ailiss opened her mouth and drew in her breath.

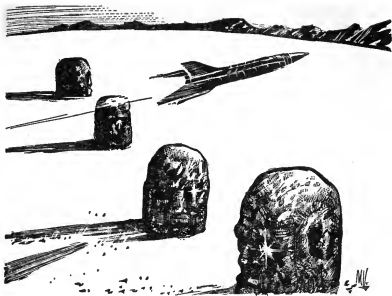
The control barrel rang. Then it rang again, and once more. As Jorn and Ailiss stared at each other in a fury of disbelief, the whole winking cavern began to pulse steadily with the slow, clear strokes of a pair of deep chimes.

Ailiss stood bolt upright, her eyes wide. So did Jorn.

"TO ALL HANDS," Ertak's voice boomed throughout the ship. "TO ALL HANDS. YELLOW WARNING ONE FOR PLANET-FALL. YELLOW WARNING ONE FOR PLANET-FALL. THIS IS A SIGHTING WARNING, BY COMPUTER ONLY. REPEAT, THIS IS A SIGHTING WARNING. STAND BY. STAND BY. YELLOW WARNING ONE FOR PLANET-FALL. STAND BY."

To Be Concluded Next Month





The four great heads loomed in the desert . . . offering riches, threatening doom. . . . Could they be sentient, or were they merely

THE BALD-HEADED MIRAGE

By ROBERT BLOCH

ILLUSTRATOR VARGA

THE asteroid didn't have a name, unless one wanted to count the four-letter word which Chuck had used to designate it as he set the ship down.

Barwell didn't like the word, or any of the words Chuck used. Back in the old days, before space-travel, people with Chuck's limited and unsavory vocabulary were

often described as "earthy." Barwell wondered what they should be called today. "Planetary"? Or "asteroidy"?

It didn't matter. What mattered was that Chuck happened to be a typical space frontiersman. Some day he and his fellows would probably be transfigured in legend as heroic interplanetary pioneers, just as the early settlers of the old American west had been transfigured. Songs and sagas would be written of their fearless exploits, their bold vision, their thirst for freedom, their struggle to shake down the stars.

But men like Barwell, who had to live with them now, knew that the space frontiersmen were probably no different than their historic counterparts back on Earth. They were misfits, antisocial aberrants who fled the responsibilities of organized society and the punishment of its laws. They sought the skies not out of poetic yearning but in a desperate attempt to evade bad debts, extortion charges, murder raps, bastardy warrants—and what they hoped to find was not the beauty of nature but the booty. They were led not by light but by loot—and because most of them were uncouth, ignorant men, they teamed

up with partners like George Barwell who provided the brain to balance the brawn.

Perhaps, Barwell reasoned, he was being unfair. Chuck, like most of his counterparts, had more than brawn; he had natural coordination, natural comprehension manifesting itself in mechanical aptitudes. He was, in a word, a damned good pilot—just as the stumblebums of the Old West were often damned good horsemen, stagecoach drivers, bullwhackers, hunters and scouts. What he lacked in ratiocination Barwell provided. Together they formed a team—cerebrum and cerebellum, plus a psychic *medulla oblongata* composed of a fusion of component qualities.

Only by the time they landed on the asteroid, Barwell was damned sick of Chuck's four-letter words. Chuck had a four-letter word for everything during their long cruise—to describe the food, the confinement in the tiny cabin of the ship, his need for a sexual outlet. Chuck talked about nothing else, was interested in nothing else.

Barwell's own tastes ran towards poetry; the oldstyle poetry of long ago, complete with rhyme and metre and onomotopoeia. But there was

no sense even mentioning the subject to Chuck; give him a title like *The Charge of the Light Brigade* and he'd think it was about the narcotics supply of some regiment. And as for *The Lay of the Last Minstrel*—

No, it was easier for Barwell to keep silent and let Chuck do the talking. About the . . . mineral deposits they were going to find, and the . . . money they'd make so they could go back to that . . . Lunadome City and tell everybody to . . .

It was easier for Barwell to keep silent, but not much easier. And by the time they were approaching the surface of the asteroid he was heartily sick of his partner, and his earthy aspirations. If George Barwell had invested his small inheritance in a second-hand ship in order to conduct a private sky-scan, it wasn't because he wanted wealth to gratify his aggressive drives against society. He knew exactly what he meant to do with his money, if successful. He'd buy himself a little place out past Pluto and set up an interplanetary Walden's Pond. Here he'd settle down to write poetry in the ancient manner; not the intermediate *vers libre* of the first space age or today's soundspeak

synthesis which had emerged from what the scholars once called "progressive jazz." He hoped, too, to do some erudite and expensive research with the priceless tapes of forgotten folk-songs.

But there was no time for such speculations now, no time for poesy. They were skimming across the surface of the asteroid, off autopilot, of course, while the instruments tested for grav., ox., density, radiation, temp., and all the rest. Chuck was at the controls, set for a handland any minute.

Barwell got the tape comps and studied them. "We'll do all right," he muttered. "One and one-fourth grav. is no problem. But we'll have to wear our bubbles. And—"

Chuck shook his head.

"Dead," he muttered. That was one of the bad things about a trip like this—both of them had gotten into the habit of muttering; they didn't really converse with one another, just vocalized a *monologue interieur*. "All dead. Desert and mountains. Of course, we want the mountains, but why the . . . does it have to be so dead?"

"Because it's an asteroid." Barwell moved over to within visual range of the scanners.

"You seldom find mineral deposits on inhabitable bodies."

His mind played the usual tricks, contradicting his last statement. He thought of the mineral deposits he had seen in the form of gold and diamonds, ornamenting the women of Lunadome City; mineral deposits on *very* inhabitable bodies. And that thought led him to still another; the lying premises of most of the "space romances" he had read, or for that matter, the so-called "factual accounts" of space travel. In almost all of them the emphasis was on the so-called thrill and challenge involved in expeditionary flights. Few were honest enough to present the reality of a spaceman's outlook, which was one of constant physical frustration. When he set up his interplanetary Walden's Pond, he'd make sure to bring along some feminine companionship. *All* spaceships were really powered with sex-drive, he decided. But to satisfy the libido required money. *Libidough*.

"Look!" Chuck wasn't muttering now, he was shouting. And pointing at the starboard scanner.

Barwell gazed out and down.

They were at a half-mile

elevation, over the desert, and the white sky shone pitilessly on an endless expanse of nothingness—the flat, monotonous expanse of sand or detritus was like a smooth, unrippled lake. *A lake in which giants bathed, immersed to their necks—*

Barwell saw them now; four giant bald heads in a row. He turned to Chuck. "What do you mean, dead?" he murmured. "There's life here. See for yourself."

"Stones," Chuck grunted. "Just stones."

"Look like heads to me."

"Sure they do, from this angle. Wait, I'll make another run."

The ship obeyed, dipping lower.

"Statues," Barwell decided. "Those *are* heads, you can see that now, can't you?"

". . .!" said Chuck. It wasn't a reply, merely a forceful observation. And now Barwell could see what he observed. The four heads set in sand *were* artificially carved, and in their eyesockets blazed a livid luminance.

"Emeralds," Chuck whispered. "Emeralds as big as wagon-wheels!"

"Can't be," Barwell shook his head. "There are no such concentrations of stratification—"

"I see 'em. So do you."

"Mirage. Some kind of igneous deposit."

"Why the . . . can't you talk English, like me?" Chuck demanded. "That's no mirage. It's real. Whoever heard of a bald-headed mirage?"

He began to snort and busied himself at the controls.

"What do you think you're doing?"

"Setting down for a landing, that's what."

"Now wait a minute—"

"What for? Man, those emeralds—"

"All right, hold it." Barwell's tone was subdued, but something about it caused Chuck to hesitate.

"Let's think things through for a minute," he continued. "Grant that there *are* actual stone heads down there. And that they have some kind of ornamentation for eyes."

"Emeralds, dammit!"

"That's beside the point. The point is, statues don't come into existence through spontaneous generation."

"Will you for . . . talk English?"

"Somebody has to *make* statuary. Don't you see, there must be life down there."

"So?"

"So we land a good distance away. *And* come out armed. Armed and cautious."

"All right. Anything that shows its head, I blast."

"You don't blast. Not until you know what it is, and whether or not it shows hostility."

"Blast first, talk later." Chuck repeated the code that was older than the hills. *The only good Indian is a dead Indian*. Is prejudice a survival-mechanism?

Chuck's instantaneous, automatic response to anything new or different would be to lash out at it and destroy it. Barwell's would be to examine it and intellectualize. He wondered which of them was reacting correctly, then decided it would depend upon individual circumstance. But then, one must never generalize, because everything is unique—and this in itself is a generalization.

Barwell unracked the weapons, nevertheless, as Chuck went into reverse landing position. He opened the compartment and extracted the suits and the bubbles. He tested the oxygen-cycle of the containers. He checked the food-belts. He brought out the footwear. And all the while he was drowning in the muddy stream-of-consciousness. Bubbles arose.

Columbus, buckling on his

armor before the landing at San Salvador . . . Balboa, that voyaging *voyeur*, peeking at a peak on Darien . . . Henry M. Stanley, being presumptuous with Dr. Livingstone . . . the first footfall on the moon, and the first man to scrawl *Kilroy Was Here* and disfigure the lunar landscape with an obscene injunction . . . a faroff memory of the California hills and a whitewashed message writ on rock; *Help Stamp Out Reality* . . . what was this land worth if those *were* emerald eyes? . . . Emerald Isles . . . when Irish eyes are bloodshot, sure, 'tis like a . . . but the eyes weren't emeralds, it was a mirage . . . a bald-headed mirage . . . a mirage of convenience. *What do you think about when you're preparing to land on a strange and alien world? You think about what a wonderful thing it would be to be back in Lunadome City, settling down to a good meal of dehydrated eggs or a bad night with a dehydrated woman. Powdered women. A new recipe. Just add water and stir. Serves two. That's what you think about, that's all you ever think about.*

And Chuck? What was *he* thinking about?

"Better make sure you use

the relief tube before you put a suit on and go out there," Chuck grunted.

That was Chuck, all right—the *practical* one.

And on this high note, the expedition proper started.

On the sweat of opening the locks. On the wrenching effort of lowering the landing-ladder. On the stumbling contact with the hard sand. On the wheezing accommodation to the oxygen-feeders. On the blinding brilliance of the garish glare, searing into the skull through eyes long-accustomed to half-darkness. On the trickle of sweat inside the suit, the tightness of the constricting crotch at every step, the heaviness of tank and weapon. *O Pioneers—*

"Oh . . . !" said Chuck. Barwell couldn't hear him, but like every spacer, he'd learned lipreading. He'd also learned to keep his own mouth shut, but now, as he turned towards the stone heads in the sand a dozen miles to their right, he broke his own self-imposed rule of silence.

"They're gone!" he gasped. And then blinked, as the echo of his own voice rebounded in reverberation from the bubble in which his head was encased.

Chuck followed his stare and nodded.

The heads were gone.

There was no possibility of miscalculation in landing. Chuck had set down within ten or twelve miles of the sighting spot. And Barwell remembered now that he had glanced sidelong through a scanner as he'd donned his suit and bubble. The heads had been visible then.

But they were gone.

Nothing on every side but an expanse of shimmering sand. And far beyond, to the left, the mountains.

"Mirage," he whispered. "It *was* a mirage, after all."

Chuck was reading him. His own lips formed a phrase. It wasn't exactly a reply—merely an obscene reaction.

As if by common, unspoken consent, the two men turned and trudged back to the ship. They clambered up the ladder, closed the locks, wearily removed their suits.

"We were space-bugged," Chuck muttered. "The two of us." He shook his head. "But I saw 'em. So did you."

"Let's go over the course again, retrace our route." Barwell waited until he saw Chuck nod. Then he sought a position at the starboard scanner.

"Waste a lot of juice taking off," Chuck grumbled. "Damn clumsy old tub!"

"If we find what we're looking for, you can have a new one. A whole fleet," Barwell reminded him.

"Sure." Chuck tested, then busied himself. There was a shuddering lurch.

"Slowly," Barwell cautioned.

Chuck answered with a suggestion as impossible as it was indecent, but he obeyed. The ship skimmed.

"Right about here," Barwell murmured. "Wasn't it?"

"Think so."

The ship hovered and the two men peered down. Peered down at empty wasteland.

"If only Mr. Eliot were alive to see it," Barwell told himself aloud.

"Who?"

"T. S. Eliot." Barwell paused. "A minor poet."

"T. S., huh?" Chuck snorted. Then he sobered. "Well, now what do we do?"

"Keep cruising. We'll head for the mountains. That's where we intended to go, anyway."

Chuck nodded and turned away. The ship rose, picked up speed.

Barwell contemplated the dryness of the desert, then refreshed himself by plunging back into the stream-of-consciousness.

Well, Columbus was disappointed with San Salvador, too; it wasn't really Asia. And Balboa never *really* stood upon a peak of Darien, except in the poem. Actually, he was at the Isthmus of Panama. Henry M. Stanley couldn't persuade Dr. Livingstone to return with him, and the first man to reach the moon was the first man to die there. And there were no dehydrated women, either, or hydrated ones, either. *Water, water, everywhere, and not a drop to drink.*

The feeling of frustration came again, and Barwell thought of the one woman he had truly loved, wishing she were somehow beside him now as she had been beside him once, so long ago.

"There they are!"

Chuck's shout brought him wet and dripping tears of self-pity, from the pool of memory. Barwell stared down and out.

The heads rose from the desert below. The great eyes gleamed.

"We're setting down!" Chuck told him.

Barwell shrugged.

Once again, the interminable routine. But this time, after both men were fully accoutred, they stared through

the scanner to reassure themselves the stone heads were still visible, scarcely a mile away.

The heads stared back.

Then the locks swung open, the ladder swung down, and they emerged. Emerged upon the emptiness.

"Gone!"

Both men muttered simultaneously.

Then they walked—walked warily, weapons at the ready, across the barren plain. And walked wearily back again.

In the cabin, interminably, they argued and discussed. "Gone with the wind," sighed Barwell. "Only there is no wind."

"It can't be a mirage. I saw those emeralds just as clear—" Chuck shook his head. "But if it was, why in hell did it have to be stone heads? When it comes to mirages, I'll take—"

And he proceeded to describe his preferences in mirages very graphically. It was Barwell who finally resolved the situation.

"The mountains," he said. "Let's not waste any more time."

So they went to the mountains.

That is, they went *near* the mountains, skimming in low for a drop-landing on the

smooth sands before the foothills. They squinted through the shimmering sheen of the scene, but there were no stone heads; only the looming loftiness of the great peaks in the distance.

Leaving the ship, they set forth on foot to clamber and climb and curse. But in the end there were merely the muttered oaths. For there was nothing to climb. The mountains were merely another kind of mirage—palpable, but not solid. Mountains of detritus, mountains of dust into which the two men swiftly sank as they attempted to proceed.

"Volcanic ash," Barwell mouthed, through the bubble. "That's the answer."

Chuck had another answer, but Barwell ignored it. He knew now that their quest was quixotic. There would be no mineral deposits in the non-existent soil of this asteroid; it was merely a gigantic lava-splinter flung forth into space by the eon-old eruption of a volcano on some far-distant planet. Either that or a meteoric byproduct. The actual explanation didn't matter. What mattered was that there would be no way to wealth in this wilderness. They'd have to go back to the ship.

The two men turned, the grippers on the soles of their footwear useless in the shifting sand as they plodded down into the plain once more. Far in the distance they could see the black speck of the ship. It was hard to walk, but they kept moving as the speck became a bulk, the bulk became a recognizable object, the object became a—

Chuck must have seen it first, because he halted. Then Barwell squinted and stared. Even in the lurid luminence his eyes widened as he saw the ship; saw the crushed and crumpled hull that had been squashed and serrated—

Then they were both running across the plain, stumbling and lurching towards the wreckage. Everything seemed to function in slow motion, as in a nightmare, but the nightmare continued. It continued as they peered up at the incredibly battered silver shell; proceeded as they swung up the ladder and found the entry squeezed shut.

They stood below, on the surface of the sand, and there was no need to mouth a word from behind the bubbles. Both of them knew the situation. Food and water for

a day, if they dared remove the bubbles long enough to ingest a supply. Oxygen for perhaps another twelve hours at most. And then—

There was no point in considering what had happened, or why, or how. All that seemed important now was the *fait accompli*.

"Fate *accompli*," Barwell told himself. And that's all he could tell himself, or trust himself to tell. Staring up at the shattered sides of the spaceship, he experienced a sensation surpassing horror. For this phenomenon was alien.

Alien. A much-used, mis-used word, which cannot express the inexpressible. *Alien*—foreign. Foreign to understanding, foreign to human comprehension. Barwell recalled Arthur Machen's definition of true evil—when the roses sing.

When the roses sing.

Perhaps *alien* isn't always synonymous with *evil*—but something had destroyed the ship. There was no wind, and no life; yet they had walked away for a few miles and returned, and the ship was crumpled.

The roses were singing. What is a rose? Barwell thought of a long-dead poet-

ess, Gertrude Stein. *A rose is a rose is a rose. And added, is evil.* But do roses live, does evil live, does the impalpable truly exist? *A rose by any other name—*

"Dammit, what happened?" Chuck, and the voice of reality. He wasn't concerned with roses, or neuroses, either. He wanted to name the enemy, locate it, and strike back. And with the realization Barwell (like a rose) wilted.

Here was a situation which didn't call for theory, or for any form of abstruse speculation. The ship was gone. They were stranded, with food and oxygen in short supply. A clear call for Chuck and his pioneer blood—or would his pioneer blood, too, be spilled across the sand?

Barwell hesitated helplessly, waiting for his partner to make the first move. No sceptre changed hands, but both sensed it was a moment of abdication. *The king is dead, long live the king. For another twenty-four hours, anyway.*

Both of them knew better than to waste breath in trying to talk through their bubbles. When Chuck turned back towards the mirage-mountains, Barwell followed without even moving his lips in token assent. At least there would

be shadow there, and shelter, and surcease. The desert held nothing for either of them. The desert was all utter emptiness and shimmering mirage. Once more, Barwell thought of a lake.

Lake. As he trudged along behind Chuck's steadily-striding figure, he wondered what would happen if—as in the olden space-romances, the aliens actually invaded Earth. They'd probably send out scouting parties first; perhaps one or two at a time, in small ships. Granted the premise that their sensory organs roughly corresponded to the human and afforded similar impressions, what might they surmise from a skimming expedition over the earth at a height of a few hundred miles?

The first thing they would note was that the Earth's surface is more than three-quarters water and less than one-quarter land. So the logical conclusion; if there is any life on this planet, the chances are better than three to one that it is *marine* life—or at the very best, amphibious. The denizens of the great seas must be the highest and most intelligent life-forms. Conquer the fishes and rule the world. A highly sensible notion, that.

But there are times when high sense does not prevail. And if aliens could not be expected to comprehend humanity's existence offhand, then how could humanity interpret alienity?

In short—was there life on this asteroid which Barwell could not detect?

While there's life, there's hope. But Barwell had no hope. He had merely a premise. Something had crushed the spaceship. Where did it come from, where did it go? How did it link with life as he knew it, how did it differ? And the desert—*was* it a desert? The mountains had not been mountains. And the mirage had been—

Chuck still wasn't wasting words, even obscene ones. He merely turned and gripped his partners' arm with a plasticene-and-metal glove. Gripped it tightly, and turned, and pointed with his free hand. Pointed straight ahead, at the heads in the sand. Yes, they were here.

Barwell could have sworn that the heads hadn't been there a moment ago. But there they were, silhouetted against the searing surface, a scant mile before them. Even at this range the emerald eyes gleamed and glared, gleamed

and glared as no mirage was meant to.

Four huge stone heads with emerald eyes. Visible to them both; visible to them *now*.

Chuck's lips formed a sentence beneath the bubble. "Keep looking at them," he said.

Barwell nodded. The two men moved forward, slowly.

Their gaze was intent, focussed upon the lambent, livid flame of the monstrous emeralds. Barwell knew, or thought he knew, what Chuck was seeing. Riches, infinite riches.

But he saw something else.

He saw all the idols of all the legends; the idols with the jewelled eyes, who stirred and moved and walked amongst men to spread destruction with a curse. He saw the massive monoliths of Stonehenge and the great figures of Easter Island and the stone horror beneath the waves in sunken R'lyeh. And the waves reminded him again of the lake, and the lake of the aliens who might misconceive and misconstrue the life-forms of Earth, and this in turn caused a curious concept. There had once been a man named Ouspensky who had speculated upon the possibility of *varieties* of time

and different *rates* of duration. Perhaps the rocks also live, but at infinitely slow pace by comparison to flesh, so that flesh is unaware of the sentience of stone.

What form might life take, if forged in fire, if birthed precipitately from a volcano's flaming womb? Those great stone heads with the emerald eyes—

And all the while they were coming closer, approaching slowly. The stone heads stared and did not disappear. The emeralds blazed and burned, and now Barwell could no longer think; he could only stare and he tried the old trick again. The cool stream-of-consciousness was waiting. Little eddies of thought swirled.

Emerald eyes. His love had emerald eyes; sometimes turquoise, sometimes smoky jade, but his love was not stone. And she was worlds away and he was here, alone on the desert. But that's not where he wanted to be—plunge back now into the stream, use the fanciful thoughts to ward off the still more fanciful reality. Think of anything but emeralds, think of longforgotten stars of a longforgotten art-form, the motion pictures; think of Pearl White and Ruby Keeler

and Jewel Carmen and of anything but emeralds, think of Diamond Jim Brady and the fabulous stones of history which men wrested from the Earth for love of woman. *Love is just around the Kohinoor*. Faith, the Hope Diamond, and Charity . . .

Emerald eyes . . . Esmeralda, and the *Hunchback of Notre Dame* . . . Hugo's title was *Notre Dame de Paris* . . . the vast cathedral with its stone gargoyles staring . . . but stones do not stare . . . or do they? *The emeralds were staring*.

Barwell blinked, shaking his head. He half-turned, noting that Chuck had broken into a run as he neared the four fantastic monuments in the sand. Wheezing and panting, he followed. Chuck didn't see what *he* saw—that was obvious. Even at the point of death, he wanted the emeralds. Even at the point of death—

Somehow Barwell managed to overtake his companion. He clawed at his arms, halted him. Chuck stared at him as he shook his head and mouthed the words.

"Don't go any closer!"

"Why not?"

"Because they're *alive*!"

"Nonsense." That was not

the word Chuck used, but Barwell divined its meaning.

"They *are* alive. Don't you see? Living rock. With their immense weight, the desert is like water, like a lake in which they can immerse at will. Immerse and reappear, up to their necks. That's why they disappeared, because they were swimming beneath the surface—"

Barwell knew he was wasting precious oxygen, but he had to make Chuck understand.

"They must have grabbed our ship, picked it up to examine it, then discarded it."

Chuck scowled and said another word which meant, "Nonsense." He pulled free.

"No—don't—keep away—"

But Chuck had the pioneer spirit. The grab-claw-lunge-loot-rape reflex. He could only see the emeralds; the eyes that were bigger than his stomach.

And he started to run the last five hundred yards, moving across the sand towards the four staring heads which waited, *watched* and waited.

Barwell sprinted after him—or tried to sprint. But he could only flounder forward, noting as he did so that the huge rock heads were pitted and eroded, but not *chiselled*. No man, and no conceivable

alien, had sculpted these semblances. For they were not semblances but actualities. The rock *lived*, the stone *sensed*.

And the emerald eyes beckoned . . .

"Come back!" It was worse than useless to shout, for Chuck couldn't see his face behind the bubble. He could only see the great faces before him, and the emeralds above. His own eyes were blinded by hunger, by a greed greater than need.

Panting, Barwell caught up with the running man, whirled him around.

"Keep back," he mouthed. "Don't get any closer—they'll crush you like they crushed the ship—"

"You lie!" Chuck turned, his weapon suddenly poised. "Maybe that was a mirage, too. But the jewels are real. I know your idea, you . . . ! Get rid of me, take the emeralds for yourself, repair the ship and take off. Only I'm way ahead of you, because that's *my* idea, too!"

"No—" gasped Barwell, realizing at the same moment that some poet had once said, "Say *Yes* to life!" and simultaneously aware that now there would be no time for further affirmation.

Because the weapon blazed,

and then Barwell was falling; falling into the stream-of-consciousness and beyond, into the bubbling blackness of the stream-of-unconsciousness where there were no stone heads or emerald eyes. Where there was, no longer, any Barwell . . .

So it remained for Chuck to stand over the body of his partner at the base of the great stone head; to stand and grin in triumph as the smoke curled up as if before the altar of a god.

And like a giant god, the stone accepted its sacrifice. Incredulous, Chuck watched the incredible—saw the rock split open, saw the mountainous maw loom large as the head dipped and *gulped*.

Then the sand was smooth again. Barwell's body was gone.

Realization came brutally, belatedly. Chuck turned to run, knowing the heads *were* alive. And as he ran a vision came to him of these cyclopean creatures burrowing through the sand, bathing beneath the surface of the plain—rising at will to survey the silence of their dread domain. He could see a great stone paw emerge to fumble with the ship; knew now what the serrations in its sides meant.

They were simply the marks of gigantic *teeth*. Teeth in a mouth that tasted, rejected; a hand had tossed the ship aside like a crumpled toy floating on the lake of sand.

For one moment Chuck thought as Barwell thought, and then the thought was transfigured by reality. A gigantic paw *did* emerge from the sand before him as he ran. It scooped Chuck up and tossed him down into the grinding stone mouth.

There was the sound stone makes when it gulps, and then silence.

The four heads turned to stare once more—stare at nothingness. They would gaze silently for a long, long time through ageless emerald eyes, for what is eternity to a stone.

Sooner or later, in another thousand years—or a million, what did it matter?—another ship would come.

THE END

COMING NEXT MONTH

The conclusion of James Blish's novel, . . . *And All The Stars a Stage*, shares top billing in the July issue of **AMAZING Stories** with a trio of top-flight short stories and a major fact article.



The latter is *A New Look at Space* by the renowned **Arthur C. Clarke**. Among the short story writers will be **J. F. Bone**, with *Noble Redman*, a full-bodied tale of skullduggery on Mars; **David Bunch**, with another story of the strangely haunting ways of Moderan; and **Damon Knight's** ironic view of psychoanalysts yet to come.

All yours in the big and vital **AMAZING Stories** for July,
on sale at your newsstand June 6.

IF AT FIRST YOU DON'T...

By JOHN BRUDY



ILLUSTRATOR VARGA

To Amos Jordan, Secretary for Cislunar Navigation, no situation was unsolvable. There were rules for everything, weren't there. . . . Except maybe this thing . . .

“WHAT’S the matter, anyway?” Amos Jordan snapped at his assistant. “Is everyone in the Senate losing their mind?”

“No more than usual,” said Clements, the undersecretary. “It’s just a matter of sentiment.”

“Sentiment?” Jordan pour-

ed himself a glass of lemonade. "What's sentiment got to do with it? It's just a standard procedural problem."

"Well, not exactly," began Clements soothingly. "After all, now, '58 Beta was the first longlived satellite ever launched, and the first successful shot of the old Vanguard series. People are proud if it. It's a sort of monument to our early efforts in astronautics."

Jordan sipped experimentally, adding a little sugar.

"But, Clem, the sky's full of the things," he complained. "There must be a hundred fifty of them in orbit right now. They're a menace to navigation. If this one's due to fall out, I say good riddance."

Clements spread his hands helplessly.

"I agree, chief. But, believe me, a lot of people have made up their minds about this thing. Some want to let it burn up. Some want to retrieve it and stash it in a museum. Either way it's a decision we're not going to reach in this office."

Jordan tossed down the rest of his lemonade.

"I'd like to know why not," he snapped, almost bristling.

"Well, frankly this thing is moving pretty fast." Clements fished a facsimile sheet out of

his jacket pocket. "Everybody's getting into the act." He handed the sheet across the desk. "Read this; it'll bring you up to date."

Jordan stared at the sheet.

"*Senate Committee Probes Beta*," ran the lead, followed by,

"The Senate Advisory Committee for Astronautics began hearing testimony this morning in an effort to determine the fate of satellite '58 Beta. Mr. Claude Wamboldt, leader of the CCSB (Citizens' Committee to Save Beta), testified that the cost of retrieving Beta from orbit would be trivial compared to its value as an object of precious historical significance. He suggested the Smithsonian Institution as an appropriate site for the exhibit. At the same time the incumbent Senator from Mr. Wamboldt's district filed a bill in the Senate which would add a complete wing to the Smithsonian to house this satellite and other similar historic objects. In later testimony Mr. Orville Larkin, leader of the unnamed committee representing those in op-

position to the CCSB stated that his group felt that to snatch Beta from orbit at this moment of its greatest glory would be contrary to natural law and that he and his supporters would never concede to any plan to save it."

Jordan raised his head and stared over the fax sheet at Clements. "Am I going out of my mind, or did this really happen?"

"It sure did . . . and is," said Clements. "Later on, I am told, Wamboldt threw a chair at Larkin, and the committee recessed after declaring both men in contempt."

Jordan shook his head.

"Why didn't somebody tell me about this?"

"I sent you a ten page memo about it last week," objected Clements, somewhat aggrieved. "Gave you the whole story with extrapolations."

"Memo! You know I never read memos! I ought to fire you . . . I would if I could . . . you . . . you 'appointee.' "

Clements shook his head warningly. "Better not, chief. You'll need me for the briefing."

"Briefing? What briefing?"

"The briefing. You're sched-

uled to testify before the committee tomorrow afternoon at three."

Senator Darius: Mr. Jordan, will you please state whether or not there is a satellite body known as '58 Beta?

Mr. Jordan: Yes, sir, there is.

Senator D: Will you describe its present orbit?

Mr. J: I'd be glad to, Senator. It now has a perigee slightly below 110 miles and an apogee of about 400 miles. The last perigee occurred 400 miles last of the Seychelles Islands about 35 minutes ago. Roughly its present position is about 250 miles above Manus Island.

Senator D: When do you expect it to enter the atmosphere for the final plunge to its death?

Mr. J: (bridling) Well, Senator, we in the Secretariat don't usually refer to such an occurrence in exactly those terms. It's really just a problem in celestial mechanics to us, and . . .

Senator D: (glaring) Your administrative assistant testified a few moments ago, sir, that '58 Beta has had a life of 185 years. Will you kindly explain to the committee how anything which has had a life

can end in anything but death?

Mr. J: I . . . uh . . . I believe I appreciate your point of view, Senator. '58 Beta experiences a very steep re-entry at each perigee. According to our computers it will disintegrate on the 82nd or 83rd revolution following that of 2:48 Greenwich crossing this afternoon.

Senator D: Tell us, Mr. Jordan . . . how many revolutions about the Mother Planet has '58 Beta made since its launching?

Mr. J: (hastily working his slide rule) Upwards of eight hundred thousand, I should say. I can provide you with an exact figure if you wish.

Senator D: That won't be necessary, Mr. Jordan. Eight hundred thousand, give or take a few paltry thousand, is close enough. Eight hundred thousand endless, lonely revolutions about an unthinking, uncaring, ungrateful world is quite enough. Quite enough, Mr. Jordan. Now sir; (squinting over his glasses) what do you think is the proper action to be taken in the matter of retrieving this historic satellite from its orbit so that it may be preserved as a living memorial to the gallant efforts of those early pioneers . . . those brave and intrepid men

of Cape Canaveral . . . to stand forevermore as a beacon and a challenge to our school children, to our students, our aspirants for candidacy to the Space Academy and to our citizens for all time to come?

Mr. J: Nothing, Senator.

Senator D: (aghast) Am I to understand, Mr. Jordan, that you are suggesting that this symbol, this quintessence of an historic and magnificent era in mankind's history . . . this unique and precious object . . . should be allowed to destroy itself and be lost forever?

Mr. J: (squirming) Senator, there are dozens of those things up there. Every year one or two burns up. They have no usefulness. They're a menace to navigation. I . . .

Senator D: (interrupting loudly) Mr. Jordan, what was the date of your appointment to your present position?

Mr. J: April 11, 2138.

Senator D: Do you consider yourself fully qualified to hold this august position?

Mr. J: (tight lipped) Senator, I am a graduate of the Administrative Academy, the Logistics Staff School, and I have 31 years seniority in my department. Furthermore . . .

Senator D: (banging his gavel) Mr. Jordan, please! Try to remember where you

are! We had enough trouble yesterday with witnesses before this committee. There will be no more of it. And Mr. Jordan, while it may be true that your technical qualifications for serving in your present position may be adequate, it is clear to me and, I am sure, apparent to other members of this committee that your feeling for history and the relation of this problem to the destiny of the human race leave much to be desired. And, Mr. Jordan, may I emphasize . . . *these* are the things that count in the long, long haul!

Jordan sat limply at his desk, his hands hanging loosely at his sides. "It's unbelievable," he muttered dully. "Where did this man Darius come from?"

"It doesn't matter much," Clements answered unsympathetically. "It's where he is now that counts."

Jordan shook his head.

"There has to be a way out. A clean, quick way out."

After a moment's thought Clements said, "Isn't there a regulation about orbital debris?"

Jordan nodded dully. "Someplace. Number 710.1, I think. Hasn't been invoked in years. Once they stopped us-

ing chemical fuels, we stopped having wrecks."

"Still," Clements went on more eagerly, "Beta's really a piece of debris, isn't it? It's not working or transmitting or whatever it was supposed to do, is it?"

"No." Jordan shrugged impatiently. "But, good grief, this thing isn't debris. Debris is . . . is big *chunks* of things; broken up space stations, or . . . or nuclear engines and things like that."

"Hell, no, chief," yelled Clements, jumping to his feet. "This is debris, pure and simple. That's your answer!"

Jordan's eyes slowly brightened.

"Clem, maybe you're right. Regulation 710.1 says that any orbital debris constituting a demonstrable menace to navigation may be destroyed at the discretion of this office." He brushed his hands together with finality. "That should do it."

Suddenly Clements' enthusiasm degenerated to a faint smile.

"I've just got to wondering, chief. Do we dare go right ahead with this?"

Amos Jordan's eyes took on a piercing glitter of command.

"This is our job, Clements. We should have done it long ago. Get Statistical and have

them find out how much boogie time is consumed in plugging that silly thing into every takeoff problem. Multiply that by all the launch stations. Convert it into man-hours per year and make that into a dollar figure. That always scares the wits out a Congressman. They'll knuckle under . . ."

He paused and cocked an ear toward the door. A faint hubbub was now percolating through from the receptionist's lobby. It grew louder. Suddenly the door opened, letting in a roaring babble, as Geraldine . . . the usually poker-faced secretary . . . leaped through and slammed it shut again. Her eyes, behind their thick lenses, were round and a little wild.

"It's General Criswell and Admiral Flack," he panted. "They insist on seeing you." She gasped for breath and added, as though she could not quite believe her own words, "And . . . and . . . oh, Mr. Jordan; they're *quarreling!*"

Jordan said, "Quarreling? Two staff men quarreling?" He looked uncertainly at Clements. "I thought there was a regulation against that?"

Clements gave a palms up shrug.

"Well, there is," snapped

Jordan. "Has something to do with interservice unity or something . . . been on the books for years. Send them in, Gerry."

Tentatively she opened the door and almost had time to gesture before being bowled over by the visitors.

Admiral Flack had the advantage of volume, and Jordan got his message first.

"Jordan," he roared in true bullhorn style, "I want to make one thing clear! '58 Beta was Navy through and through! Start to finish! She's got salt water on her, and she's going to be pulled out of orbit and that's that!"

"Navy through and through, hell!" sneered General Criswell. "A fine botch you made of it, too! How many times did you try before you slung that thing up there? How many goofs were there afterward? The Dodgers are in last place, and they've got five pitchers who could have done it without warming up."

"Watch your mouth, Criswell," advised Admiral Flack, tightlipped. "There's considerable tonnage of Air Force hardware under water, too. Maybe the Russians beat us, and maybe von Braun got lucky, but *ours* is *still there*, Mac! Just remember that!"

"You people have fetishes," stormed the General. "You even keep Admirals' hats and hang them on pegs. Who wants your hat, you pack rat? Where would we ever keep all the junk you people want to save?" He shuddered. "Good God! Hats!"

"That's . . . just . . . about . . . all . . . I'm . . . going . . . to . . . take," Admiral Flack said, spelling out the entire sentence. He stared furiously at the General. "Don't think we don't know that once '58 Beta is down it'll be your precious damned '61 Epsilon that's in the oldest orbit. I'll bet you fly boys will break your silly backs trying to recover that one when its time comes."

Jordan pounded his desk. "Gentlemen, shut up!"

Appalled by this exhibition of low level civilian effrontery, they both did so without really meaning to.

"Gentlemen," Jordan announced firmly in the almost uncanny silence, "the entire problem is solved as of now. '58 Beta constitutes a demonstrable menace to navigation. Under the authority vested in this office I will issue instructions to have it picked up by a salvage ship tomorrow. Once it's brought down you may

claim it if you like and do with it what you please."

Admiral Flack shot a look of pure triumph at General Criswell. The General, however, was not paying attention. He was looking, almost with an expression of pity, at Amos Jordan.

"I'm afraid, Mr. Jordan," he said slowly, "that you don't fully realize the implications of such an act at this time. It may be within your jurisdiction to salvage and all that, but I believe that the decision *whether* to salvage now rests with the legislature. I would hesitate to act without securing high . . . *very high* concurrence in this matter."

Flack erupted.

"Criswell, you're an idiot! A chicken hearted idiot! On top of that you haven't any business telling Jordan . . . ah, Mr. Jordan what he can and can't do."

Criswell glared icily at Flack.

"A mere suggestion," he gritted and stalked out.

Admiral Flack paused and bestowed a warm smile upon Amos Jordan before hurrying out the door after the General. As the door closed Jordan heard the contest break out afresh in the lobby.

That was only the begin-

ning. The general population, eager for a silly season diversion, chose sides with religious fervor. Congress went into emergency session. Newspapers drew their lines and fought ferociously. Student riots began on the second day and sympathy strikes on the third.

On the fourth Jordan got the big news break first, for a change. With growing caution he had been holding the situation unaided by the simple expedient of refusing to issue a salvage permit without which '58 Beta could not be touched. Clements brought the news at midnight, interrupting a tempestuous press conference.

He managed to get Jordan out of the milling lobby and into the office. "We've got trouble, chief," he began. "Ascension reports Beta out of orbit."

Jordan stared incredulously.

"Perturbed that badly already? Maybe something's wrong with their computers."

"Not perturbed, chief. Gone. It's just not there any more. It's been picked up . . . no doubt about it."

Jordan's face purpled.

"I want a complete ground tracking report on that pebble for the last three revolutions. Fast!"

"I doubt if we can get it," said Clements dubiously. "Woomera only checks it occasionally to train radar operators. Perigee was south of Singapore on the last two passes, but so low I doubt if they got any clear sightings. It would be a waste of time."

Jordan wrung his hands. "You have something better?"

Clements sat for a minute with a faraway look in his eyes.

"Do we know anyone who can make Navy Operations toe the mark?"

"Of course. Why?"

Clements tapped his fingertips together.

"Wouldn't it be interesting to filter the mission reports of all Navy ships that have been outside the atmosphere in, oh, say the last thirty-six hours?"

Jordan's eyes lit up like twin afterburners.

"They'll have it hidden like the British crown jewels, but . . ." He grabbed the phone. "Gerry? Have General Criswell paged and ask him to come to my office if possible." He chuckled triumphantly. "Criswell's on the Joint Security Service Board . . . what an exercise for that gumshoe outfit!"

It took three hours for General Criswell's ferrets to ob-

tain facsimiles of the reports needed. A sweating staff (borrowed from the cryptographic section to preserve secrecy) finally broke them down to three probables: a Lunar courier which had aborted and returned to base for no clean cut reason, an alleged training exercise in three body orbits with the instructors' seats inexplicably filled with nothing lower than the rank of Lieut. Commander and a sour smelling sortie out of Guantanamo labeled *Operation Artifact*.

Jordan remained sold on the latter for half an hour until fuel consumption and flight time log figures failed to correlate with an orbital flight, and the bottom fell out of the case. As it turned out it was the courier after all. Both the pilot and his commander refused to talk until presented with the alternative of court-martial proceedings.

Senator Darius: Now, Admiral, I'm going to put the question to you this way, just to see if I can get a straight answer. Did you or did you not issue orders to Lunar Courier G771 specifying in general substance that it was to retrieve satellite '58 Beta?

Admiral Flack: (hurt but proud) The Navy, sir, has a long record of gallantry, a tra-

dition of derring do dating back to John Paul Jones . . . a tradition we are all proud of and which we continue and will always continue . . .

Senator D: (with acid patience) Again, if I may put the question, Admiral. Did you or did you not issue the order?

Admiral F: (defiantly) '58 Beta is Navy property, sir! I am glad and proud to say that I issued the order to retrieve her.

Senator D: Aha! (to the recording secretary) Did you get that? And now, Admiral, will you explain to this committee why this action, in view of the exigencies of the present situation, didn't strike you as singularly high handed, not to say out of your jurisdiction?

Admiral F: (after a whispered consultation with an aide) Well, sir, there is a precedent. May I recall to your attention an incident recorded in Navy history about eighty years ago. An officer of flag rank, if my memory holds, in defiance of instructions and in a damaged ship, at great danger to himself and his crew, acting on an operational plan which had been scathingly disapproved by his superiors, went to the rescue . . . the successful rescue . . . of a three-man Lunar exploration party

which had become lost near the south scarp of Sinus Iridum. The officer's name, I am almost certain, was Captain Steven Darius . . . the Senator's grandfather, I believe . . . an officer the Navy will never cease to honor.

Senator D: (shuffling papers, clearing throat, wiping glasses) Well, ah, yes Admiral . . . I do recall something along those lines. Of course, this is different . . . altogether different. But at the same time, sir, a most interesting parallel. The . . . ah . . . the committee will recess until two o'clock. You are excused, Admiral And . . . oh, yes . . . if you're free, sir . . . possibly you might join me at lunch?

"If I were you, chief," said Clements soothingly, "I would just stop worrying about your jurisdiction in this thing. Beta's out of orbit, and we no longer have a problem. How nice can things be?"

Jordan gritted his teeth and wadded up paper with an odd gesture, as though his fingers were encircling someone's neck.

"You will be sorry you said that," he said peevishly. "Whatever happens I'm going to assign it to you for action while I sit on the bench and cheer." He rang for Gerry.

"What's happening now . . . I haven't been out of here in three hours."

Clements stretched out on the Vibrolounge and turned it on.

"The president," he began, as the machine went to work, "has called an arbitration meeting. Everyone's in on it . . . Darius, Flack, Criswell, Wamboldt, Larkin and the Lord knows who else. They are supposed to come to some sort of agreement as to what's to be done. The minutes of the meeting are expected to take the form of a recommendation to congress for action. By way of the Advisory Committee for Astronautics with Darius introducing the motion, of course."

"Of course," echoed Jordan. "Who else could?"

The door opened, and the huge glasses of Gerry peered in.

"Yes, chief?"

"Get on your telephone and finagle a way to route the first press release from this big arbitration meeting direct to my DeskFax. Can do?"

Gerry nodded.

"No sweat, boss," she said and backed out.

"Now," said Jordan, returning to Clements, "you can get your overweight carcass out of my chair and let me into it. Sit

on the hot seat for a while. I'll relax and you read the news when it comes in. It'll be your bad luck, not mine."

The facsimile machine gave a little chug and began unwinding a pale green, endless sheet. Clements began to read from it.

"In an unprecedented session at the White House today the President revealed that a unanimous decision had been reached regarding the fate of '58 Beta will be placed in the the congress for action it was recommended that a solid copy of the historic satellite, complete with meteor pits, be made and placed in a special display in the Smithsonian Institution. The original itself, '58 Beta will be placed in the third stage payload compartment of the Smithsonian's Vanguard missile and . . . in an historic re-enactment of the first launch . . . will be injected into permanent orbit about the Earth."

There was a loud snap as Jordan turned off the Vibrolounge. In a single, convulsive movement he was on his feet and around the desk.

"Get out of my chair," he yelled at Clements. "Let me at that phone! Get Gerry in here! Get Flack on the telephone . . . try to catch him at the White House if you can!

IF AT FIRST YOU DON'T . . .

And get Administration to send over some forms!"

Clements started for the other phone . . . then stopped and stared at Jordan.

"Forms?" he repeated slowly. "What kind of forms?"

Jordan's answer rattled the windows.

"Resignation forms, you idiot!"

General Criswell walked briskly to the front of the conference room. He took chalk in one hand and pointer in the other. He rapped sharply on the desk with the pointer and sent a keen, Air Force type glance over his assembled staff.

"Gentlemen, by direction of Congress and under orders issued by the Secretary of Defense the Air Force has been assigned the mission of re-launching satellite '58 Beta. The launching vehicle will be either the Smithsonian exhibit Vanguard or a duplicate if the old one proves to be structurally unsuitable.

"To help you understand the magnitude of the problem involved and, of course, to give you guidelines for additional staffing, I will review for you the major techniques utilized in the original Vanguard launchings. I have had copies of the 1958 launch

documentary films printed for each department. They represent excellent source material for your planning sessions.

"Now, gentlemen . . . the original Vanguard was the classic example of what we now call, somewhat facetiously I'm afraid, the hybrid propulsion system. It utilized chemical fuels throughout . . . liquid oxygen and kerosene in the first stage, fuming nitric acid and unsymmetrical dimethyl-hydrazine in the second stage and an unknown form of solid propellant in the third stage."

A buzz of nervous comment ran through the assembled officers, and sitting in the back row, Jordan felt his blood run cold. Where, he wondered in a sort of dreadful daze, would they even find a crew to work on this project. No sane Launch Monitor he had ever known would even go near such a bomb, much less work on it.

The General rambled on.

"Now the guidance system, gentlemen, may at first strike you as rather incredible. However, it worked remarkably well in the original, and there seems no reason to suppose we cannot force it to repeat. I foresee some difficulty in finding manufacturers whose shop

practices are flexible enough . . . or sloppy enough, if you prefer . . . to turn out a piece of mechanical gear to such low tolerances. However, we will ask for bids and award to the lowest; that should do it. It always has in the past at any rate." He paused to allow the chuckles to subside.

Jordan crept quietly out and headed for his office.

Clements was busy supervising the placement of two new file cabinets. When he saw Jordan's face, he turned directly to his desk, poured a lemonade and handed it to his chief. Jordan took the glass, paused thoughtfully, opened a drawer and added a couple shots of gin.

Clements raised his eyebrows encouragingly, but Jordan simply drank and shook his head dully.

"Horrible," he said. "Horrible, horrible."

He turned and walked slowly back to the conference.

By this time General Criswell had a film showing in progress.

"This, gentlemen," he was saying, "was the famous launch attempt of December sixth, 1957."

Jordan had never seen the film, and he watched in fascination as the launch crew scurried about their duties.

Propellants and explosives people appeared, waddling in grotesque acid suits. Liquid oxygen boil off made a hazy lake in which men walked with apparent unconcern.

Then, from a fixed and apparently unattended camera came a steady, portentous view of the rocket . . . sleek and so incredibly slim that Jordan wondered why on Earth it didn't simply topple over and be done with it.

The sound track came to life with sudden, brassy violence. Someone was counting backward. When he reached zero, the first stage engine burst into life, the rocket lifted off its platform, slowed, began to tilt slowly to one side and settled back into the stand. No, it kept right on going through the stand. The rear section began to crumple. Then there was a horrible burst of flame which engulfed the lower part of the rocket and then, with perfectly savage violence, erupted in great billowing bursts of fire until only the extreme tip of the missile was visible. The conical top of the first stage fell off and disappeared into the inferno rather like an ice cream cone falling into the sun. The film stopped at this point.

"That," said General Cris-

well matter-of-factly, "was the end of the first launch attempt. You will note, gentlemen, that not only was the vehicle structurally weak, but it also burned well, once ignited. These two points, I dare say, will exercise considerable influence over our handling of this project."

Jordan, sick to his stomach, got up again and left the conference, this time for good.

Once begun the program proceeded feverishly. A corps of designers rooted through every available shred of data: microfilm, old blueprints and ancient engineering notes from files so old that no one knew why they still existed. Films, recorded data, technical histories and newspaper reports . . . nothing was spared.

Slowly at first and then with almost magical speed, the ancient Vanguard came to life. Her structure took shape. Her tankage and guidance were reproduced. Like along atrophied nerves and muscles her controls and electrical system once more hummed with power. Her engines were duplicated and tested (though not without an explosion or two), and her gyros were run in (by shuddering engineers who were accustomed to hit-

ting Marsport on the nose with a box half the size). And tiny Beta, her wee antennas and Hoffman solar cells carefully fitted into place, now had a twin sister enshrined in the Smithsonian Institution.

Jordan reflected that it was a solution bordering on genius even though he was forced to admit that Senator Darius was its foremost architect. His feeling for the old coyote was still something less than brotherly, though forced association had revealed unsuspected and valuable negotiative skills.

One morning several weeks later Jordan sat before his desk which was piled high with unanswered correspondence. He drank lemonade and glared across at Clements whose desk was piled even higher.

"I told you this was going to be your baby," Jordan said, "but I guess I can't make it stick. There's too much of this stuff." He waved at the stacks of paper. "Where does all this junk come from?"

Clements picked up a letter at random.

"This one," he said, "is from the Dupont Chemical Corp. They want us to send them the quality control spe-

cification for the hydrazine that was used as fuel in the first launch. They say they can't proceed till they have it."

He tossed the letter aside and picked up another. "Here's a purchase request for four hundred yards of sailcloth. Now what the hell do you suppose they want sailcloth for?"

"Maybe it's for another project," said Jordan, cramming half a doughnut into his mouth. "I found one yesterday for hypodermic needles. On top of that it wasn't signed."

"That figures," said Clements tossing the letter aside and picking up another. "Now, how's this . . . good grief! The Ancient Order of Hibernians, if you please, formally requests that . . . since '58 Beta was launched on St. Patrick's day . . . to do otherwise with this launch would be unthinkable, sacriligious, treasonable, etc, etc."

Jordan froze in his chair.

"That's the one!" His voice sounded faintly strangled. "That's the one that'll kill us, right there! I have a feeling for these things. How long till St. Patrick's day?"

Clements looked at his desk calendar. "Three weeks."

Jordan's eyes rolled up-

ward. "We're dead!" he said, buzzing for Gerry. "Dead as mackerel."

Gerry answered, and Jordan asked for General Criswell.

A fine seabreeze was whipping ashore at Canaveral Space Port; not strong enough to be a nuisance, but strong enough to blow Senator Darius' emerald green tie persistently around behind his neck. He was still puffing a little from his climb up the steps to the balcony on top of the Space Control Center. As soon as he caught his breath he tugged at Jordan's elbow and said, "Mr. Jordan, I have the great honor to introduce to you Mr. Patrick McGuire, president of the Ancient Order of Hibernians."

Jordan shook hands, noticing as he did so that Mr. McGuire was carrying something that closely resembled a hip flask. It had a bright green silk ribbon tied around the neck.

"It's a pleasure," he said. "What's in the bottle?"

Mr. McGuire laughed a rich bellow.

"That, me friend," he said in a brogue so carefully cultivated that Jordan winced almost visibly, "is a bottle o' wather from the River Shan-

non, fer the christenin', b'dad 'n' bejabers."

"The christening?" Jordan echoed hollowly.

"Indade, the christenin' . . . with the Senator's kind permission I'll now step down and officiate. One piddlin' smash at the nose of yonder rocket is all I ask. One smash and a Hail Mary, and she's off to Glory!"

"Jordan . . ." began the Senator.

"Now, Senator . . ." began Jordan.

But the bullhorn above them drowned out everything and effectively stalled the plans of the Hibernians by announcing in deafening syllables that everyone was to clear the launch area.

In the distance Jordan observed dozens of tiny figures scuttling from the gleaming Vanguard toward something that looked vaguely like a turtle but which he had heard was called a blockhouse.

"I think," he said in unutterable relief, "that we're about ready to launch."

Jordan finally found Clements in the milling throng. They stood at the balcony rail staring fixedly at the Vanguard as the count progressed downward with what seemed dreadful slowness.

"How long is a second, any-

way?" growled Jordan peevishly.

The countdown proceeded to minus twenty minutes . . . minus fifteen minutes. Then came the quick announcement, "The count is T minus twelve minutes and holding."

"Twelve minutes and holding?" repeated Jordan jumpily. "What does that mean?"

"It means," answered Clements with just a touch of superiority, "that they have stopped the count at T minus twelve minutes because something is wrong. It will delay the launch."

Jordan wrung his hands fretfully.

"Something wrong? I never heard of such a thing. What could possibly go wrong?"

"Oh," ventured Clements, "I suppose there are a few things about this rocket that could fail to function under unusual circumstances." He snubbed out his cigarette. "After all, your watch stops sometimes, doesn't it?"

"Sometimes," Jordan admitted sourly, "but never at T minus twelve minutes."

After a short time the bullhorn shook the area with the news that the count had resumed. Jordan borrowed Clements' binoculars and stared fixedly at the abandon-

ed Vanguard. Suddenly he started violently. "My God, Clem," he yelled, "it's on fire! There's smoke flying out right there in the middle. Look!"

Clements took a quick glance.

"Relax, chief," he said reassuringly. "It's oxygen coming from a vent. They can't seal the oxygen tank till just before launch, or it'll blow up."

"Oh, it can't blow up," quavered Jordan, going to pieces. "But it will. I feel it in my bones. It's going to blow up. . . . ker BOOM!"

Clements patted him on the back.

"Stop worrying, chief. It's going to work just fine. You wait and see."

Jordan shook his head in disbelief. "kerBOOM!" he said faintly.

The bullhorn announced T minus four minutes. To divert Jordan's attention Clements suggested that he watch the pilots of the photography ships who were about to board. With some difficulty Jordan focussed the instrument and observed the two pilots walk across the apron in front of the main operations building and climb into their small ships. A blue halo formed softly around the stern of each as they cut on

the engines and brought them up to idle.

Then suddenly the count was a T minus ten seconds. 9 . . . 8 . . . 7 . . . 6 Jordan thought he was going to faint . . . 3 . . . 2 . . . 1 Zero!

There was a dazzling flash of igniting kerosene and lox which caused Jordan to jump into the air, a terrible burst of smoke and dust and then an overwhelming, harsh shattering roar such as had not disturbed Canaveral Space Port in more than a hundred years.

Deafened Clements looked at Jordan; saw his lips form the work "kerBOOM."

But in spite of all the evidence to the contrary the Vanguard was off the launcher, balancing with unbelievable, rocklike steadiness on that flickering, fiery column. Slowly, almost painfully the thing rose, gathered speed, pitched slowly eastward and bored triumphantly into the sky. Beside it, a thousand yards to the north and south, sped the photo ships, their drive haloes still scarcely brighter than when idling on the ground. With cameras whirring they escorted '58 Beta into space for the second time.

There was considerable confusion, some hoarse cheering and a great deal of milling around. Clements got a grip

on Jordan and steered him to the AstroBar where two quick ones put him back together again.

"Now, what we should do," Clements suggested, "is to go down to the trajectory section and find out the latest word on the launch analysis."

Jordan hiccupped.

"Why?" he said, a little belligerently. "What's to analyze? We got it launched, didn't we? What more d'they want? Besides, I like it here."

Forty five minutes later the reports clattered in from Cairo and Woomera. In the Port Commander's private briefing room a young woman brought a sheaf of papers to the Commander. He began to read aloud. The audience leaned forward in strained attention.

"Preliminary flash report on the re-launch of satellite '58 Beta. The launch phase was eminently successful. The hold at T minus twelve minutes was not due to any malfunction in the missile itself, but rather to a disorder of another kind . . . the engineer who was functioning as Launch Monitor had fainted in the blockhouse. The count was picked up under the direction of the Assistant Launch Monitor. After launch

the three stages of the rocket separated properly, and injection into orbit occurred at the predicted altitude."

He paused and shuffled the papers.

"Now I have here," he continued, dropping a sheet and picking it up, "the description of the orbit now occupied by '58 Beta. We have a perigee of six hundred twenty five miles and an apogee of twenty nine hundred miles, and . . . oh, my word; this is a tough break! Well, gentlemen, we can't win 'em all. As you know, we had hoped for a permanent orbit. However, according to our computers, while '58 Beta is now in an orbit, it is a degenerative one. She will unfortunately suffer a progressive perigee drop on each revolution and after three hundred forty eight years, seven months and approximately nineteen or twenty days she will re-enter the atmosphere and burn up. I am heartily sorry, gentlemen."

They returned to the Astro-Bar, and Clements began trying to catch up with Jordan.

"You know," said Jordan, his head wobbling a little with the emphasis he put into the words, "this is the damndest farce in the history of the world."

"You're absolutely right, chief," agreed Clements, taking another slug. "And what are we going to do about it?"

Over his empty glass Jordan gave Clements a slow, confidential wink. Then he fished some papers out of his pocket. He folded them carefully and slipped them into an envelope. Meticulously drying a spot on the bar with his coatsleeve he put down the envelope and began writing on it. Finally he finished. Sealing it he waved it in the air in front of Clements.

"These," he said solemnly "are the resignation forms you got for me that day. Do you remember those resignation forms, Clements, you old appointee, you?"

Clements set his glass down indignantly.

"Certainly I remember, old chiefie. I remember because I got a set for myself while I was at it."

"Well, good for you, old appointee. Now, you take this envelope, and when we get back to Washington you put it in the the office archives file, O.K.? Safest place this side of Fort Knox."

"Depend on me, chief," he said, taking the envelope and reading the instructions Jordan had written.

To be held for the use of the

Undersecretary for Cislunar Navigation incumbent in the year 2492.

"Good idea," said Clements. "Let's drink to the jerk . . . O.K.?"

*Memo: 92 8574 27 October 2492
From: Secretary for Cislunar Navigation
To: Undersecretary*

The oldest item in the archives file was opened today. We are not certain that it does not constitute some sort of barbaric practical joke. Note that the forms involved have been superseded several dozen times over since they

were originally printed. Investigate and report.

*Memo: 92 1751 29 October 2492
From: Undersecretary for Cislunar Navigation
To: Secretary*

Due to excessive demands for time caused by the present Congressional furor regarding our department and its rights and duties concerning debris collection and disposal we have been unable to act on your memo 92 8574. Present priority weighting indicates that the earliest compliance date will be late in December. Please denote concurrence.

THE END

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Steps 1, 2 and 3 went according to plan. Then she moved on to ...

STEP IV

By ROSEL GEORGE BROWN

ILLUSTRATOR VARGA

THE first time Juba saw him, she couldn't help recalling the description of Ariovistus in *Julius Caesar*: *Hominem esse barbarum, iracundum, temerarium.*

She unpinned the delicate laesa from her hair, for Ter-ran spacemen are educated, and if they have a choice, or seem to have, prefer seduction to rape.

Step. I. A soft answer turneth away wrath, leaving time for making plans.

He caught the flower, pleased with himself, Juba saw, for not fumbling, pleased with his manhood, pleased with his morality in deciding not to rape her.

Rule a—A man pleased with himself is off guard.

He was big, even for a Man, and all hair, and in his heavy arms the veins were knotted and very blue. He had taken off his shirt, letting the air blow shamelessly over him.

It was true he was wonderful to see. And Juba knew that such is the nature of our violences, if she had been born into such a body, she too, would be a thing of wars and cruelty, a burner of cities, a carrier of death and desolation.

His face softened, as though the hand of Juno had passed over it. Softly he gazed at the flower, softly at Juba.

Rule b—This is the only time they are tractable.

"Vene mecum," she bade him, retreating into the glade—what was left of it after his ship burned a scar into it. She ran lightly, so as to give the impression that if he turned, only so far as to pick up the

weapon on the ground by his shirt, she would disappear.

"I follow," he said in her own language, and she stopped, surprise tangling her like a net. For she had been taught that Men speak only New-language in our time, all soft tongues having been scorned to death.

She should not have stopped. He looked back toward his gun. "Wait a moment," he said. His "a"'s were flat and harsh, his words awkwardly sequenced.

"Come with me," she said, and ran off again. She had been caught off guard.

Would he follow her? "Wait!" he cried, hesitated, and came after her again. "I want to get my gun." He reached for Juba's hand.

She shrank back from him. "Mulier enim sum." Would he get the force of the particle? What could he fear from a mere woman?

When he had followed her far enough, when he had gone as far as he would, for fear of losing his way from his ship, she let him take her hand.

"Terran sum," he said. And then, with meaning, "Homino sum."

"Then you are, naturally, hungry," Juba said. "You have no need to come armed.

Let me take you to my home. There are only my sisters and I and the mother."

"Yes," he said, and took her other hand.

She blushed, because he was strangely attractive, and because the thought came to her that his ways were gentle, and that if he spoke a soft tongue, perhaps he was not like other Men.

Rule c—They are all alike.

"Come," Juba said, turning, "We are not far from the cottages."

She watched, during the meal, to see how he impressed the sisters and the mother. The little sisters—all bouncy blond curls and silly with laughter—their reaction to everything was excitement. And the mother—how could she seem so different from her daughters when they were so completely of her? They had no genes but her genes. And yet, there she sat, so dignified, offering a generous hospitality, but so cold Juba could feel it at the other end of the table. So cold—but the Man would not know, could not read the thin line of her taut lips and the faint lift at the edges of her eyes.

Juba brought him back to the ship that night, knowing he would not leave the planet.

"Mother," Juba said, kneeling before the mother and clasping her knees in supplication. "Mother . . . isn't he . . . different?"

"Juba," the mother said, "there is blood on his hands. He has killed. Can't you see it in his eyes?"

"Yes. He has a gun and he has used it. But mother—there is a gentleness in him. Could he not change? Perhaps I, myself . . ."

"Beware," the mother said sternly, "that you do not fall into your own traps."

"But you have never really known a man, have you? I mean, except for servants?"

"I have also," she said, "never had an intimate conversation with a lion, nor shared my noonday thoughts with a spider."

"But lions and spiders can't talk. That's the difference. They have no understanding."

"Neither have men. They are like your baby sister, Diana, who is reasonable until it no longer suits her, and then the only difference between her and an animal is that she has more cunning."

"Yes," Juba said resignedly, getting to her feet. "If thus it is Written. Thank you, Mother. You are a wellspring of knowledge."

"Juba," Mother said with

a smile, pulling the girl's cloak, for she liked to please them, "would you like him for a pet? Or your personal servant?"

"No," she said, and she could feel the breath sharp in her lungs. "I would rather . . . He would make a good spectacle in the gladiatorial contests. He would look well with a sword through his heart."

She would not picture him a corpse. She put the picture from her mind. But even less would she picture him unmanned.

He would rather die strong than live weak. And Juba—why should she have this pride for him? For she felt pride, pangs as real as the pangs of childbirth. There are different kinds of pride, but the worst kind of pride is pride in strength, pride in power. And she *knew* that was what she felt. She was sinning with full knowledge and she could not put her sin from her.

Juba ran straight to the altar of Juno, and made libation with her own tears. "Mother Juno," she prayed, "take from me my pride. For pride is the wellspring whence flow all sins."

But even as she prayed, her reason pricked at her. For she was taught from

childhood to be reasonable above all things. And, having spoken with this Man, having found him courteous and educated, she could not believe he was beyond redemption simply because he was a Man. It was true that in many ways he was strange and different. But were they not more alike than different?

And as for his violences—were they much better, with their gladiatorial combats? Supposed to remind them, of course, of the bloodshed they had abhorred and renounced. But who did not secretly enjoy it? And whose thumbs ever went up when the Moment came? And this making of pets and servants out of Men—what was that but the worst pride of all? Glorying that a few incisions in the brain and elsewhere gave them the power to make forever absurd what came to them with the seeds at least of sublimity.

Juba stood up. Who was she to decide what is right and what is wrong?

She faced the world and its ways were too dark for her, so she faced away.

There was a sound in the brush near her, and she wished the stars would wink out, for the sound had the rhythm

of her Mother's approach, and Juba wanted to hide her face from her mother.

The mother frowned at Juba, a little wearily. "You have decided to forsake the world and become a Watcher of the Holy Flame. Am I not right?"

"You are right, mother."

"You think that way you avoid decision, is that not right?"

"That is right," Juba answered.

She motioned the girl to the edge of the raised, round stone and sat. "It is impossible to avoid decision. The decision is already made. What you will not do, someone else will do, and all you will have accomplished is your own failure."

"It is true," Juba said. "But why must this be done, Mother? This is a silly ceremony, a thing for children, this symbolic trial. Can we not just say, 'Now Juba is a woman,' without having to humiliate this poor Man, who after all doesn't . . ."

"Look into your heart, Juba," the mother interrupted. "Are your feelings silly? Is this the play of children?"

"No," She admitted. For never before had she been thus tormented within herself.

"You think that this Man

is different, do you not? Or perhaps that all men are not so savage of soul as you have been taught. Well, I tell you that a Man's nature is built into his very chromosomes, and you should know that."

"I know, mother." For Juba was educated.

"There was a reason once, why men should be as they are. Nature is not gentle and if nature is left to herself, the timid do not survive. But if bloodlust was once a virtue, it is no longer a virtue, and if men will end up killing each other off, let us not also be killed."

"No," Juba said. For who would mind the hearths?

"All that," the mother said, rising and dusting off her robe, "is theory, and ideas touch not the heart. Let me but remind you that the choice is yours, and when the choice is made I shall not yea or nay you, but think on this—a woman, too, must have her quiet strength, and you spring of a race of queens. How shall the people look to the Tanaiids for strength in times of doubt and trouble, if a Tanaid cannot meet the Trial? The choice is yours. But think on who you are."

The mother slipped away and left Juba alone in the

quiet precinct of Juno, watching how the little fire caught at the silver backs of turned leaves when the wind blew.

Yes, Juba knew who she was, though they had never made it an important thing to be a ruler. But ruler or not, she loved her land and her home and her people, and even this ringed space of quiet where the spirit of Juno burned safely. Life somehow had chosen for her to be born and had made room for her in this particular place. Now *she* must choose *it*, freely. Otherwise she would never have in her hands the threads of her own life, and there would be no life for her. Only the complete loss of self that comes to the Watchers of the Holy Flame. And that is a holy thing, and an honor to one's house, if it is chosen from the heart. But if it is chosen from fear of crossing the passageways of life—then it is no honor but a shame.

And Juba knew she could not bear such a shame, either for her house or within the depths of her soul.

"Mother Juno," she prayed, "make clear the vision of my soul, and let me not, in my vanity, think I find good what the goddesses see to be evil."

So she rose with a strong and grateful heart, as though

she had already faced her trial and had been equal to it.

The rest of the night she slept warmly, so unaware are we of the forces within us.

The first fingers of the sun pulled Juba from her cot, as they pull the dew from the green things of the earth, and she pinned in her hair the first Laesa she saw that the sun's fingers had forced.

The Man was standing beside his space ship again. It was a small ship—indeed, from the angle of Juba's approach, and from the glancings of the sun, it looked smaller than the Man.

Juba's decision held firm within her, for she saw there was no humility in him. He stood there laughing at the dawn, as though he were a very god, and were allowing the earth and sky to draw off their shadows for him, instead of standing in awe and full gratitude for the gift of life, and feeling, as one should, the smallness of a person and the weakness of a person's power, compared with the mighty forces that roll earth and sky into another day.

It is in this way, Juba thought, that men seem strong, because they have no knowledge of their own weaknesses. But it is only a seem-

ing strength, since it stems from ignorance, and the flower of it falls early from the bush.

Juba did not, however, say all this.

Rule d—A man's ego is his most precious possession.

"You are very strong," Juba said, her eyes downcast, for he was bare again to the waist, and it had come to her that she would like to string her fingers through the hair on his chest.

"Runs in the family," he said carelessly. "But come, I had dinner with you yesterday. Let's have breakfast in my ship today."

"I . . ." What was she afraid of? If he'd meant to do her any violence, he'd have done it already. And this would provide Juba's opportunity—"Yes," she said. "I would be delighted."

There had to be some talk, and perhaps something else, before she could make her request of him. They had to be friends of some sort before he was at all likely to agree.

It is difficult to make conversation with a man.

Finally Juba gave up trying to think of something interesting to say and asked, "What is your way of life, that you should be going

around by yourself in a space ship?"

"My way of life?" He laughed. "It becomes a way of life, doesn't it? Whatever we do ends up enveloping us, doesn't it?"

For a man he was thoughtful.

"I'm a scout," he said. "I don't know that I chose it as a way of life. I was born into the Solar Federation and I was born male and I grew up healthy and stable and as patriotic as any reasonable person can be expected to be. When war came I was drafted. I volunteered for scouting because the rest of it is dull. War is dull. It is unimaginably dull."

"Then why," Juba asked, for she was amazed at this, "do you fight wars?"

Again he laughed. Is there anything these men don't laugh at? "That's the riddle of the sphinx."

That is *not* the riddle of the sphinx, but Juba did not correct him.

"When you're attacked," he went on, "you fight back."

"It could not possibly," Juba said, "be as simple as you make it sound."

"Of course, it isn't," he said, and he took two square sheets that looked like papyrus, and put them each in a

bowl. "There is the question of what you did, or did not do, that you should be attacked."

"And what did you do, or not do, that you should be attacked?"

He was pouring a bluish-looking milk over the papyrus thing. His hands were too large for everything he handled, and Juba wondered, if his hand were on her wrist, if he could crush it. Or, being able to crush it, if he would take care not to.

"Oh — trade agreements, immigration agreements, how many space ships can go where—who can say what either side did when or where to begin it all? Nobody is *making* it happen. Sometimes, perhaps. But not as far as this war is concerned. All I can say now is—O.K., for whatever reason I'm in a war. At this point, what can I do but kill or be killed?"

Juba mashed the papyrus into the milk with her spoon, as the man was doing. She took a bite. It tasted just like it looked.

"You could," Juba said, "refuse to have anything to do with it at all. You could simply go away and. . . ." She stood up and the spoon clattered to the floor and she could feel the bowl of milk

spill cold and sticky along her thigh. Because that's just what you can't do. You can't pull the thread of your life out of the general weaving.

She looked at her adversary, and he was as close to her as the darkness is to the evening.

"No," he said. "Life flows. A person's life or a civilization's life or all humanity's life. If it cannot flow forward it flows backward. Isn't that true? *Isn't* it?"

But she turned away from him, to recover herself a little. For she felt that he was right and her country and her foremothers were wrong and she was wrong and yet—she had made her choice last night, at the altar of Juno, and though she felt herself possessed by new understanding, she had to go on in spite of it, as though she fought wounded or blinded.

"You are perhaps right," Juba said. "I am only a woman and I do not know. But still, can you not take a few days from your war? Must you think always on that and never on anything else?"

He ate another of the paper things, not melting it first, and drank from the container.

"Look, Juba," he said, "I've been thinking on other things

ever since I got here, but first I want to . . ."

"First," Juba interrupted, for here was her moment, "I ask one thing of you. Only that you radio incorrect coordinates back to your base. Say you have moved on, that this is a barren world."

"Let me talk to you first," he said. "I want to . . ."

"Please," Juba begged, moving toward him. "It is no loss to you. Only a small favor, to protect our planet from outsiders, in return for . . . for whatever pleasures I can provide for you, or my sisters, if I do not please you."

"All right," he said, turning to his communication equipment. "If that's the only way you're going to let me speak to you."

"Your tape," Juba said. "Turn on your tape."

"Tape!"

"I do not speak Newlanguage. I will have to have it translated."

The man looked at Juba hard and worked at the corner of his mouth with his tongue.

"All right," he said, flipping a switch. He turned to his equipment and spoke his strange language into it. It was rough and she liked it.

"Now," he began.

"Give me the tape," Juba interrupted.

He jostled a flat box out of the wall, held the tape up to the light and snapped off a small portion and handed it to Juba.

"Come outside," she said, taking his hand. "My world is more beautiful than your space ship."

"Can't deny that," he said, watching the branches of the Untouchable Bush draw away as they walked through it.

"Now," he said, when he was stretched out on the undulant moss. He felt at the patch of moss sprouting under the warmth of his palm, and watched while an exploratory tendril curled around his little finger. "Now—do you know what it is I want of you?"

"I have," Juba said, "some idea." She hadn't known they talked about it. She thought they just did it.

"Well, you're wrong."

"Oh," she said, and stood up and walked over to the brook so he would not see her face. For she wondered wherein she was lacking and she was embarrassed. "Then," she asked, "what *do* you want of me?"

"There is, as I said, a war on. I am, as I said, a scout. I'm looking for a communica-

tions base halfway between a certain strategic enemy outpost and a certain strategic allied outpost."

"Why?"

"Why? I don't know why. Does the grain of sand know where the beach ends? And if I did know, what would it matter?"

"But why *this* planet? There are other systems. Even other planets in this system." The moss curled under her feet and pricked at her. She was not doing this right. What did she care about his war? But she did not know what to do. She had been prepared for Seduction, Step II, and had even thought up a few things to say, though conversation is not included in the manual, because there is usually a language barrier. It was his speaking the language that made the difference.

"This is the only immediately habitable planet. You don't realize how expensive and cumbersome and logistically difficult it is to set up the simplest station on an abnormal planet. Tons of equipment are needed just to compensate for a few degrees too much temperature, or a few degrees too little, or excessive natural radiation, or a slight off balance of

atmosphere. Or even if a planet is *apparently* habitable, there's no way of being absolutely sure until there have been people actually living on it for a while. There isn't time for all this. Can't you just believe me?"

"I believe you," Juba said, "and the answer is no. It is not my decision to make. I cannot decide for my people. And if I could, the answer would still be no. That is exactly why we cut ourselves off from the rest of civilization. To stay out of your wars, to carry on civilization when you have laid it waste. That is why we are a planet of parthenogenetic women."

"Is it?" he asked. "Was it to carry on the torch for civilization or to flee from it? Life flows, Juba. If it doesn't flow forward, it flows backward. Which way does your world go?"

Which way? The little stream scrambled over its bright rocks, flashing the sunlight like teeth laughing.

Which way? The servants, the pets, the gladiatorial contests. The old goddesses. Were we becoming weary with time? Juba wondered. What sense did it make? What future did it mold?

The Man got up and came

to put his arms around Juba, crossing his arms over her chest and putting his hands on her shoulders. He leaned down until she could feel his breath on the back of her neck.

Then it was that Juba could feel from his strength that everything he said must be right, because he said it, and that he was the name for all those things inside her which had no name.

"I cannot bring you in for the Ceremonies," Juba said. "Whatever you are and whatever I am—these futures must lie with the goddesses. But sacrifice you I cannot." She turned in his arms. "Go," she said. "And quickly."

He kissed her. "I will not go," he said, and she wanted very much for him to stay, but not for the Ceremonies.

"I was to draw you into the gladiatorial contests," she said, "with rich promises. But I cannot. For those who die it is bad. But for those who live it is worse."

"Well, now you have told me and I will not be drawn," he said with that grin. "Who said women are not barbarous? It is up to you," he went on, "to free your world from its deadly isolation."

He kissed her by the vein in her neck, the heavy

one, where the blood beats through. And there flashed through her head the instructions for Seduction, Step II, and she wondered that other women had been able to remember printed pages when this happened.

"You must go," Juba said, holding him so that he would not. "What do you want me to do?"

He lost his fingers in her hair, "I like blondes," he said. "And I like a slender waist." There was a tension in the muscles of his lower lip and his eyes seemed to lengthen, and by this Juba knew what he felt at that moment.

But he said, "I want you to switch off your planetary directional diverter. Even if you had let me radio in the coordinates I had they would have been wrong, wouldn't they?"

"Yes," Juba said. "But the directional diverter diverts only in certain patterns, so that it might be possible to figure out . . ."

"I know. Maybe and maybe not. I want you to turn it off long enough for me to get up beyond your whole system and have my instruments take a fix on your orbit. Then we can planet in blind, if necessary, to set up our station."

"But as soon as you take off," Juba said, wondering if she would really do such a thing or if she would suddenly wake as from a dream and find her wits again, "they'll be on me with their questions. And what could I say to them?"

"You won't have to say anything to them," the Man said. "You'll be on the ship with me."

"With *you*!" The thought went all through Juba, as ice water does sometimes, and bubbled up into her ears. "With you." When she looked at him she really couldn't see what he looked like any more. Only a sort of shine. "You mean you'll take me away with you?"

"Do you think I could leave you?" he asked, all shiny. "Smash the thing," he said. "They'll repair it, but by that time it'll be too late."

She sat down on the moss, and he was over her, his face urgent, as for Step III. But he said, "Go ahead. Go now. And hurry."

She got up hastily, planning in her mind how she would arrange her face, so as to appear calm if anyone should see her and what excuses she would make if there were anyone about the Machine House. They had no

guards and kept no watches, for why should they?

It was at the market place, near the fish stalls, that she met her mother.

The mother tugged at Juba's robe as she went by. "It is not easy for you, is it?" she asked, low, so that no one could hear.

"No," the girl said. "It is not easy." Was it not written all over her? Was it not on her breath and shaken out of her hair?

The mother looked closely at Juba and felt at her forehead. "Perhaps it is forcing you too soon," she said with a hesitant frown which for a moment made her look like someone else. "It is not too late, Juba, to get someone else. Even now . . ."

"It is too late," Juba said, and pulled away, afraid to talk more. But although the mother's face, Juba knew, was set, and her mind winding unhappily through surmises, she would not follow the girl, out of pride.

Pride.

The machine was alone. Juba cut it off and pulled the handle of the switch out. She then opened up the face plate and jerked out all the wires in sight. She reached in and

broke off all the fine points of the compass settings and pulled out everything loose she could reach.

Then she walked back quickly through the market place, so as not to seem to be skulking.

"Juba . . ." the mother said, standing in her path.

"Later," Juba said. "It will soon be done. Mother . . . I love you. All of you." And she went around the mother, quickly.

"It is done," Juba said, giving him the switch key as though it meant something all by itself. "You have at least several hours, even if they find out at this moment. And they won't. There will be no real suspicion until your . . . our ship takes off."

After he had made love to Juba, she could see the sun was wheeling high, and in the temple they would begin to wonder a little. "We must hurry," she said, and she broke a budded branch off a laesa bush, so that later, when everything was strange, this bit of what she had been would be with her to surprise her. In strange places, but with this man.

She turned to smile at him, for her heart was full of love,

and she felt that he was as much within her as he was within himself.

It was then that he grabbed her hands and tied them, and he tied her feet, and he lit a cigarette and stood for a moment, looking at her and laughing a little with his eyes.

Juba's mind was dark, very dark, as dimness after bright sunlight in the eyes. She spoke to him with her brows, afraid to ask out loud why he had done this, though there could be only one reason.

"Thanks," he said, "for all of it." Then, seeing her tears, he said, "Well, really, what did you expect?"

There was a sharp stone beneath her shoulder, and she moved against it, so that it would cut through her pain. And, feeling the blood warm on her skin her tears stopped, for it was the stone that had hurt her, and not the Man.

"You act," she said with a sneer, "as I would expect a man to act."

"And you," he said, walking off with his heavy steps, "have very kindly acted as I would expect a woman to act."

Thus it was that she opened her veins on the sharp rock. Not out of love. Not out of sorrow. Not even out of fear. Out of pride. **THE END**

TULAN

By C. C. MacAPP

*To disobey the orders of the
Council of Four was unthinkable
to a Space Admiral of the old
school. But the trouble was,
the school system had changed.
A man, a fighter, an Admiral
had to think for himself now, if
his people were to live.*

WHILE facing the Council of Four his restraint had not slipped; but afterward, shaking with fury, the Admiral of the Fleets of Sennech slammed half-way down the long flight of stone steps before he realized someone was at his elbow. He slowed. "Forgive me, Jezef, They made me

so mad I forgot you were waiting."

Jezef (adjutant through most of Tulan's career, and for some years brother-in-law as well) was shorter and less harshly carved than his superior. "So they wouldn't listen to you. Not even Gre-fen?"

"Even Grefen." That vote had stabbed deepest of all.

Jezef took it with the detachment that still irritated Tulan. "The end of a hundred years of dreams; and we go back under the yoke. Well, they've always been soft masters."

They reached the ground cars. Before getting into his own Tulan said coldly, "Since you're so philosophical about it, you'll be a good one to bear the sight of men saying goodbye to their families. We're to take full crews to Coar and surrender them with the ships. Requisition what help you need and get everybody aboard by noon tomorrow."

Jezef saluted with a hint of amused irony, and left.

Whipping through the dark icy streets, Tulan smiled sourly, thinking how Sennech's scientists had reversed themselves on the theory of hyperspace now that Coar had demonstrated its existence. Maybe the Council was right in mistrusting their current notions. As for himself, he saw only two things to consider: that with Coar swinging behind the sun, the accuracy of her new weapon had gone to pot; and that before she was clear again he could pound her into surrender.

His swift campaigns had already smashed her flabby fleets and driven the remnants from space, but the Council, faced with the destruction and casualties from just a few days of the weird surprise bombardment, was cowed.

He'd spent the previous night at home, but wasn't going back now, having decided to make his farewell by visiphone. It was the thing he dreaded most, or most immediately, so as soon as he reached the flagship he went to his quarters to get it over with.

Anatu's eyes—the same eyes as Jezef's—looked at him out of the screen, filling him with the familiar awkward worship. "You've heard?" he asked finally.

"Yes. You won't be home before you go?"

"No; I . . ." He abandoned the lie he'd prepared. "I just didn't feel up to it."

She accepted that. "I'll wake the boys."

"No! It's—" Something happened to his throat.

She watched him for a moment. "You won't be back from Coar. You've *got* to speak to them."

He nodded. This wasn't going according to plan; he'd intended it to be brief and controlled. Damn it, he told

himself, I'm Admiral of the Fleets; I've no right to feelings like this. He straightened, and knew he looked right when the two sleepy stares occupied the screen.

Their hair was stiff and stubborn like his own, so that they wore it cropped in the same military cut. It could have stood a brush right now. They were quiet, knowing enough of what was wrong to be frightened.

He spoke carefully. "I'm going to Coar to talk to them about stopping the war. I want you to look after things while I'm away. All right?"

"All right, Dad." The older one was putting on a brave front for the benefit of the younger and his mother, but the tears showed.

As Tulan cut the connection he saw that Anatu's eyes were moist too, and realized with surprise that he'd never before, in all the years, seen her cry. He watched the last faint images fade from the screen.

Sometime near dawn he gave up trying to sleep, dressed, and began composing orders. Presently Jezef came in with cups of steaming amber liquid. They sipped in silence for a while, then Jezef asked "You've heard about Grefen?"

Tulan felt something knot inside him. He shook his head, dreading what he knew was coming.

"He killed himself last night," Jezef said.

Tulan remembered the agony in the old Minister of War's eyes when he'd voted for surrender. Grefen had been Admiral in his day; the prototype of integrity and a swift sledgehammer in a fight; and Tulan's first combat had been under him. A symbol of the Fleet, Tulan reflected; and his death, yes, that too was a symbol—what was there but shame in surrender, for a man or a Fleet or a world?

His hand clenched, crumpling the paper it was resting on. He smoothed the paper and re-read the order he'd been writing. He visualized the proud ranks of his crewmen, reduced to ragged lines shuffling toward prison or execution.

It seemed impossible, against the laws of nature, that men should strive mightily and win, then be awarded the loser's prize. His anger began to return. "I've a mind to defy the Government and only take skeleton crews," he said. "Leave the married men, at least."

Jezef shrugged. "They'd

only be bundled into transports and sent after us."

"Yes. Damn it, I won't be a party to it! All they did was carry out their orders, and superbly, at that!"

Jezef watched him with something like curiosity. "You'd disobey the Council? You?"

Tulan felt himself flush. "I've told you before, discipline's a necessity to me, not a religion!" Nevertheless, Jezef's question wasn't unfair; up to now it really hadn't occurred to him that he might disobey.

His inward struggle was brief. He grabbed the whole pad of orders and ripped them across. "What's the Council, with Grefen gone, but three trembling old men? Get some guns manned, in case they get suspicious and try to interfere."

Blood began to surge faster in his veins; he felt a vast relief. How could he have ever seen it differently? He jabbed at a button. "All ships' Duty Officers; scramble communication circuits. This is the Admiral. Top Secret Orders. . . ."

Shortly before noon the four-hundred-odd ships lifted out of Sennech's frosty atmosphere, still ignoring the furi-

ous demands from the radio. Fully armed, they couldn't be stopped.

Tulan's viewer gave a vivid picture of the receding fifth planet. The white mantle of ice and snow was a backdrop for blue artificial lakes and the dark green of forest-strips (hardy conifers from Teyr) alternated with the lighter shades of surface farms. The ice had been almost unbroken until men came, bringing more heat than Sennech had ever received from a far-off sun.

That had been before the First Solar War, when Teyr (the race of Aum had originated there) ruled. That awful struggle had bludgeoned the home planet back to savagery, and left Coar and Sennech little better off.

With recovery, Coar had taken over and prospered immensely. Teyr stayed wild except for small colonies planted there by the other two planets, and Sennech lagged for a while.

Within Tulan's lifetime his world had found itself ready to rise against the lax but profit-taking rule of Coar, and that rebellion had grown into the present situation.

Sennech's wounds were plainly visible in the view-screen; great man-made crat-

ers spewing incandescent destruction blindly over farm, city, or virgin ice. The planet was in three-quarters phase from here, and Tulan could see the flecks of fire in the darkness beyond the twilight zone. Near the edge of that darkness he made out the dimmer, diffused glow of Capitol City, where Anatu would be giving two small boys their supper.

He checked altitude, found they were free of the atmosphere, and ordered an acceleration that would take them halfway to the sun in fifty hours. It was uncomfortable now, with Sennech's gravity added, but that would fall off fast.

Jezef hauled himself in and dropped to a pad. "I wish I had your build," he said. "Do you really think we can pull this off?"

Tulan, in a good mood, grinned at him. "Have I ever led you into defeat yet, pessimist?"

"No; and more than once I'd have bet ten to one against us. That's why the Fleet fights so well for you; we have the feeling we're following a half-god. Gods, however, achieve defeats as terrible as their victories."

Tulan laughed and sat down beside Jezef with some

charts. "I think I'll appoint you Fleet Poet. Here's the plan. No one knows what I intend; we could be on our way around the sun to overtake Coar and either fight or surrender, or we might be diving into the sun in a mass suicide. That's why I broke off the seige and pulled all units away from Coar; the fact that they're coming back around to meet us will suggest something like that."

"Are they going to join up?"

"No; I want them on this side of the sun but behind us. I have a use for them later that depends on their staying hidden. Incidentally, I'm designating them Group Three.

"In a few hours we're going to turn hard, this side of the sun, and intercept Teyr. I want to evacuate our forces from the moon, then decoy whatever the enemy has there into space where we can get at them. That's their last Fleet capable of a sortie, and with that gone we can combine our whole strength and go around to Coar. She'll probably give up immediately, on the spot."

Jezef thought it over. "Will they be foolish enough to leave the moon? As long as they're safely grounded there,

they constitute a fleet-in-being and demand attention."

"We'll give them a reason to move, then ambush them. Right now we've a lot of reorganizing to do, and I want you to get it started. We're splitting this Force into Groups One and Two. Here's what I want."

They cut drives and drifted in free fall while supplies were transferred between ships, then Tulan held an inspection and found crews and equipment proudly shipshape. Despite the proliferating rumors, morale was excellent.

A few hours later the realignment began. Space was full of the disc-shapes; thin, delicate-looking Lights with their projecting external gear, and thicker, smoothly-armored Mediums and Heavies. He had twenty-three of the latter in Group One, with twice as many Mediums and a swarm of smaller craft.

Group Two, composed of the supply ships and a small escort, was already formed and diverging away. That was a vital part of his plan. From a distance they'd look to telescope or radar like a full combat fleet.

He was almost ready to swerve toward the third planet and its moon, but first

he had a speech to make. It was time to squash all the rumors and doubts with a dramatic fighting announcement.

He checked his appearance, stepped before the scanner, and nodded to Communications to turn it on. "All hands," he said, then waited for attention.

The small monitor screens showed a motley sampling of intent faces. He permitted himself a tight smile. "You know I have orders to surrender the Fleet." He paused for effect. "Those are the orders of the Council of Four, and to disobey the Council would be unthinkable.

"Yet it is also unthinkable that a single ship of the Fleet should surrender under any circumstances, at any time; therefore I am faced with a dilemma in which tradition must be broken.

"The Council of Four has lost courage, and so, perhaps, have many of the people of Sennech. We have ways of knowing that the people of Coar, far more than our own, clamor at their government for any sort of peace.

"Coar's fleets are smashed and the remnants have fled from space.

"Clearly, courage has all but vanished from the Solar System; yet there is one place

where courage has not wavered. That place is in the Fleet of Sennech.

"At this moment we are the only strength left in the Solar System. We dominate the System!

"Would we have history record that the Fleet won its fight gloriously, then cravenly shrank back from the very brink of victory?

"We left Sennech fully armed, though our orders were directly opposite. I need not tell you that I have made the decision any man of the Fleet would make.

"This is our final campaign. Within a short time we shall orbit Coar herself and force her surrender. That is all."

There was a moment so quiet that the hum of the circuits grew loud, then the monitors shook with a mighty cheer.

Later, alone, Jezef congratulated him amusedly. "They are certainly with you a hundred percent now, if there was any doubt before. Yet there was one argument you didn't even hint at; the strongest argument of all."

"What was that?"

"Why, you're offering them a chance at life and freedom, where they might be going to imprisonment or execution."

That irritated Tulan. "I'm

sure you're not so cynical about Fleet loyalty and tradition as you pretend," he said stiffly. "I wouldn't affront the men by using that kind of an argument."

Jezef grinned more widely. "Did it even occur to you to use it?"

Tulan flushed. "No," he admitted.

Teyr and her moon Luhin, both in quarter-phase from here, moved steadily apart in the viewers.

Group One's screen of light craft probed ahead, jamming enemy radar, and discovering occasional roboscouts which were promptly vaporized. Far behind, Group Two showed as a small luminescence. It would never be visible to Luhin as anything else, and then only when Tulan was ready.

They reversed drives, matched speeds neatly, and went into forced orbit around Luhin. On the flagship's first pass over the beleaguered oval of ground held by Sennech's forces—unsupported and unreinforced since the home planet's defection—Tulan sent a message squirting down. "Tulan commanding. Is Admiral Galu commanding there? Report situation."

The next time around a long reply came up to them.

"This is Captain Rhu commanding. Galu killed. Twenty percent personnel losses. Six Lights destroyed; moderate damage to several Mediums and one Heavy. Ground lines under heavy pressure. Ships' crews involved in fighting at perimeter. Food critical, other supplies low. Several thousand wounded. Combat data follows." There was a good assessment of the struggle, with some enemy positions that were known.

The Fleet Force that had escorted nearly one hundred thousand ground troops included five Heavies and other craft in proportion, besides the transports and supply ships. Alone, they'd been pinned down by superior enemy ground forces and by a sizable fleet holed up all around the satellite. With Tulan's support they could be taken off.

Tulan composed orders. "Withdraw ships' crews from lines and prepare to lift. Get wounded aboard transports and prepare to evacuate troops. Set up fire control network to direct our ground support."

The tedious job of shrinking the perimeter, a short stretch at a time, began, harassed by the quickly-adapting enemy.

During the first twenty hours the hostile fire was all from ground projectors, the enemy ships not risking detection by joining in. By that time one section of the front had pulled back to where several ships, sheltered in a crater, would have to lift.

Lines of men and equipment converged on the ships and jammed aboard. The actual lift was preceded by a diversion a few miles away, which succeeded in pulling considerable enemy fire. The ships got off in unison, slanting back across friendly territory and drawing only light missiles which the defenses handled easily.

Then, suddenly, a salvo of heavy stuff came crashing in, too unexpected and too well planned to stop. One of the lifting ships, a transport, vanished in a great flash.

Tulan yelled into his communicator. "Plot! Where did that come from?"

"I'm sorting, sir. Here! A roboscout got a straight five-second plot before they downed it!"

"Intelligence!" Tulan snapped. "Get the co-ordinates and bring me photos!"

There were already pictures of the area where the salvo must have originated,

and one of them showed a cave-like opening in a crater wall. "That's it!" Tulan jabbed a pencil at it. "You could hide a dozen ships in there. Let's get a strike organized!"

The strike group included four heavies besides the flagship, with twelve Mediums and twenty Lights. They slanted down in a jerky evasive course while pictures flashed on screens to be compared with the actual terrain.

Ground fire, chemically-propelled missiles, erupted ahead of them and the small craft went to work intercepting it. They were down to a hundred miles, then fifty, streaking along the jagged surface so close they seemed to scrape it. This was point-blank range; as the computers raced with the chaos of fire and counter-fire, human senses could only register a few impressions—the bruising jerks, the shudder of concussions, white streaks of rocket-trails, gushers of dirt from the surface, winking flashes of mid-air interception.

Then the Heavies were on target. The flagship jumped as the massive salvo leaped away—not chemical missiles, but huge space torpedos propelled by Pulsor units like the

ships' drives, directing their own flocks of smaller defensive missiles by an intricate network of controls. The small stuff, augmented by fire from the lighter ships, formed momentarily a visible tube down which the big stuff streaked untouched.

The whole crater seemed to burst upward, reaching out angry fingers of shattered rock as they ripped by, rocking and bucking with the blasts. Tulan's viewer swivelled aft to hold the scene. Secondary blasts went off like strings of giant firecrackers. Great black-and-orange fungi-like clouds swirled upward, dissipating fast in the thin atmosphere. Then Tulan spotted what he was looking for: three small ships flashing over the area, to get damage-assessment pictures. There was still a lot of ground-fire from farther out, and it caught one of the three, which wobbled crazily then disappeared in a flash which blanked out the viewscreen.

"Intelligence!" Tulan shouted. "Casualties?"

Intelligence was listening to his earphones and punching buttons. "Two Lights lost, sir. Slight damage to seven more and to one Medium."

"All right. Get a telecopy of those pictures as soon as

you can; we certainly hit something. Maybe a Heavy or two." He relaxed, aching, and reflected that he was getting a little mature for actual combat.

The pull-back went on, drawing only the local ground-fire now that the enemy had been taught his lesson. Groups of ships lifted almost constantly. The final position was an oval forty by sixty miles, held almost entirely from the sky. The last evacuees straggled in like weary ants, and when the radio reported no more of them the last fifty ships lifted together and ran the gauntlet with slight losses.

Tulan pulled the Force away for rest and repair. Group Two was idling at extreme radar range, making a convincing blip, and he designed some false messages to be beamed toward it with the expectation of interception. The impression he wanted to give was that Group Two was the Force that had been bombarding Coar, coming in now to join him. Actually, the latter fleet was farther away, hidden in the sun and, he hoped, unsuspected.

Things were going according to plan except for one puzzling item: there was no

message from Sennech's small garrison on Teyr. All he could get from the planet was a steady radar scan, which might mean that Sennech's colony had been conquered by Coar's.

He'd been hoping to get certain supplies from Teyr, and now he took a strong detachment in close to the planet to find out what was wrong. The threat finally raised an answer. "This is the Chief of Council. What is it that you want?"

"Chief of Council? What are you talking about? I want the Garrison Commander."

"I suppose you're Admiral Tulan. There's been a change here, Tulan; Teyr is now an independent planet. Your garrison, with Coar's, comprise our defense forces."

Tulan stared at the planet's image. "You're at war with Coar!"

"Not any more, we aren't." There was a chuckle. "Don't sound so shocked, Admiral; we understand you're in mutiny yourself."

Tulan slapped the microphone onto its hangar. He sat, angry and bewildered, until he remembered something, then buzzed Communications. "Get me that connection again. Hello? Listen. I have sixty thousand troops in

transports, with almost no food. I intend to land them."

"They're welcome as non-combatants, Admiral. They'll have to land disarmed, in areas we designate, and live off the country. We've already got more refugees than we can handle."

"Refugees from where?"

"Haven't you been in contact with Sennech at all?"

"No."

"Oh." There was a thoughtful pause. "Then you don't know. There's bad radiation in the atmosphere and we're hauling as many away as we can. We can use your ships if you're finished playing soldier."

Tulan broke the connection again and turned, fuming, to Jezef. "We'll blast our way in and take over!"

Jezef raised his eyebrows. "What good would that do?" he asked.

"Why; they—for one thing, we've got to think of those troops! We can't land them unarmed and let them be slaughtered by the savages!"

Jezef grinned. "I doubt if they'll refuse to let them have enough small arms to defend themselves. They can't stay where they are."

"But they're military men, and loyal!"

"Are they?" The war's over

for them, anyway. Why not let them vote on it?"

Tulan jumped up and strode around the command room, while Jezef and the staff watched him silently. Gradually, the logic of it forced itself upon him. "All right," he said wearily, "We'll let them vote."

A few hours later he studied the results gloomily. "Well, after all, they're not Fleet. They don't have the tradition."

Jezef smiled, then lingered, embarrassed.

"Well?" Tulan asked.

"Sir," (that hadn't come out, in private, for years) "I'd like to be relieved."

It was a blow, but Tulan found he wasn't really surprised. He stared at his brother-in-law, feeling as if he faced an amputation. "You think I'm wrong about this whole thing, don't you?"

"I'm not going to judge that, but Sennech's in trouble far worse than any question of politics, including your own family."

"But if we turn back now Coar will recover! It's only going to take us a few more hours!"

"How long does it take people to die?"

Tulan looked at the deck

for a while. "All right. I'll detach every ship I can spare, and put you in charge. You'll have the transports too, as soon as they're unloaded." He stared after Jezef, wanting to call out to him to be sure to send word about Anatu and the boys, but somehow feeling he didn't have the right.

He took the fighting ships away from Teyr, to where Group Two could join up without being unmasked, then started sunward as if he were crossing to intercept Coar. A few miles in, where they'd be hidden in the sun, he left a few scouts.

As he saw it, the enemy commander on the satellite, noting the armada's course and finding himself apparently clear, would have no choice but to lift his ships and start around the sun by some other path to help his planet.

That other path to Coar could be intercepted, and as soon as Tulan was lost near the sun he went into heavy drive to change direction. He drifted across the sun, waiting for word from his scouts. At about the time he'd expected, they reported ships leaving the satellite.

He looked across the room toward Plot. "Plot! Feed that data to Communications as it

comes in, will you?" And to Communications: "Can we beam Group Three from here?"

"Not quite, sir; but I can relay through the scouts."

"All right; but make sure it's not intercepted. I want Group Three under maximum acceleration for Luhin, and I want them to get running reports on the enemy."

"Right, sir."

Tulan was in the position he wanted, not needing to use his own radar, but able to pick up that of Coar's fleet at extreme range, too far to give them a bounce. He'd know their course, speed, and acceleration fairly well, without even being suspected himself.

He held that position until the enemy was close enough to get a bounce, then went into drive on an intercepting course.

One of the basic tenets of space maneuver was this: if two fleets were drawing together, with radar contact, neither (barring interference from factors such as the sun or planets) could escape the other; for if one applied acceleration in any direction the other could simply match it (human endurance being the limitation) and maintain the original relative closing speed.

When the enemy comman-

der discovered Tulan's armada loafing ahead of him, he'd been accelerating for about ten hours and had a velocity of a million miles per hour, while Tulan was going the same direction but at half the speed. The quarry began decelerating immediately, knowing it could get back to Luhin with time enough to land.

Tulan didn't quite match the deceleration, preferring to waste a few hours and lessen the strain on his crews. He let the gap close slowly.

He could tell almost the precise instant when the other jaw of his trap was discovered, for Plot, Communications, and Intelligence all jerked up their heads and looked at him. He grinned at them. What they'd picked up would be an enemy beam from Luhin, recklessly sweeping space to find the Coar fleet and warn it of the onrushing Group Three.

The enemy commander reacted fast. It was obvious he'd never beat Group Three to Luhin, and he made no futile attempts at dodging, but reversed drives and accelerated toward the nearest enemy, which was Tulan. Tulan was not surprised at that either, for though Coar's fleets had bungled the war miserably,

when cornered they'd always fought and died like men.

He matched their acceleration to hold down the relative speeds. The swift passing clash would be brief at best. He formed his forces into an arrangement he'd schemed up long ago but never used: a flat disc of lighter ships out in front, masking a doughnut-shaped mass behind. He maneuvered laterally to keep the doughnut centered on the line of approach.

Roboscouts appeared and blossomed briefly as they died. The fuzzy patch of light on the screens swelled, then began to resolve into individual points. The first missiles arrived. Intricate patterns of incandescence formed and vanished as fire-control systems locked wits.

A sudden, brilliantly-planned salvo came streaking in, saturating the defenses along its path. Ships in Tulan's secondary formation swerved frantically, but one darting, corkscrewing missile homed on a Heavy, and for an instant there were two suns.

Tulan, missing Jezef's smooth help, was caught up in the daze and strain of battle now. He punched buttons and shouted orders as he played the fleet to match the

enemy's subtle swerving. Another heavy salvo came in, but the computers had its sources pinpointed now, and it was contained. These first few seconds favored the enemy, who was only fighting the light shield in front of Tulan's formation.

Now the swelling mass of blips streaked apart in the viewers and space lit up with the fire and interception. Two ships met head on; at such velocities it was like a nuclear blast.

Then Coar's ships crashed through the shield and into the center of the doughnut. Ringed, outgunned, outpredicted, they hit such a concentration of missiles that it might as well have been a solid wall. Ships disintegrated as if on a common fuse; the ones that didn't take direct hits needed none, in that debris-filled stretch of hell.

Tulan's flagship rocked in the wave of expanding hot gasses. There was a jolt as some piece of junk hit her; if she hadn't already been under crushing acceleration away from the inferno she'd have been holed.

From a safer distance the path of destruction was a bright slash across space, growing into the distance with its momentum. It was

annihilation, too awful for triumph; there was only horror in it. Tulan knew that with this overwhelming tactic he'd written a new text-book for action against an inferior fleet. He hoped it would never be printed. Sweating and weak, he slumped in his straps and was ill.

While brief repairs and rearming were under way, he sent scouts spiraling out to pick up any radio beams from Sennech or Teyr. There were none. The telescopes showed Sennech's albedo down to a fraction of normal; that, he supposed, would indicate smoke in the atmosphere. He wavered, wondering whether he should detach more ships to send out there. Reason and training told him to stick to the key objective, which was Coar's surrender. He waited only for Group Three to achieve a converging course, then started around the sun again.

They didn't encounter even a roboscout. He crossed the sun, curved into Coar's orbit, matched speeds, and coasted along a million miles ahead of the planet, sending light sorties in to feel out any ambushes. Still there was no sign of fight, so he went in closer where the enemy could

get a good look at his strength. Finally he took a small group in boldly over the fourth planet's Capitol and sent a challenge.

The answer was odd. "This is Acting President Kliu. What are your intentions?"

Tulan realized he was holding his breath. He let it out and looked around the silent command room, meeting the intent eyes of his staff. He had an unreal feeling; this couldn't be the climax, the consummation — this simple exchange over the radio. He lifted the microphone slowly. "This is Admiral Tulan, commanding the Fleets of Sennech. I demand your immediate and unconditional surrender."

There was something in the reply that might have been dry amusement: "Oh; by all means; but I hope you're not going to insist upon an elaborate ceremony. Right now we don't give a damn about the war; we're worried about the race."

There was more silence, and Tulan turned, uncertainly, looking at the bare spot where Jezef ought to be standing. He buzzed for Communications. "Connect me with Captain Rhu. Rhu; I'm advancing you in rank and leaving you in charge here.

I'm going down to accept the surrender and find out what this man's talking about."

Kliu was gaunt and middle-aged, wearing, to Tulan's surprise, the gray of Coar's First Level of Science. He was neither abject nor hostile, agreeing impatiently to turn over the secret of Coar's weapon and to assist with a token occupation of the planet. Again Tulan had the unreal, let-down feeling, and judging by Kliu's amused expression, it showed.

Tulan sent couriers to get things started, then turned back to the scientist. So you have had a change of government. What did you mean, about the race?"

Kliu watched him for a moment. "How much do you know about the weapon?"

"Very little. That it projects matter through hyperspace and materializes it where you want it."

"Not exactly; the materialization is spontaneous. Mass somehow distorts hyperspace, and when the projected matter has penetrated a certain distance into such distortion, it pops back into normal space. The penetration depends mainly upon a sort of internal energy in the missile; you might think of it more as

a voltage than as velocity. You've made it very hard for us to get reports, but I understand we successfully placed stuff in Sennech's crust."

"Yes; causing volcanoes. Our scientists speculated that any kind of matter would do it."

"That's right. Actually, we were projecting weighed chunks of rock. When one bit of matter, even a single atom, finds itself materializing where another already is, unnatural elements may be formed, most of them unstable. That's what blew holes in your crust and let the magma out."

Tulan considered the military implications of the weapon for a few moments, then pulled his mind back. "I see; but what about the radiation? It wasn't more than a trace when I left."

Kliu looked away for a while before answering. "When we learned you'd defied your government, our own military got out of hand. They had a couple of days before the sun cut us off completely, and they began throwing stuff as it could be dug and hauled to the projectors. They used high energies to get it past the sun. As we realize now, a lot of it hit the planet deeper than at first,

below the crust. Under such pressure a different set of fissionables was formed. Some of them burst out and poisoned the atmosphere, but most of them are still there." He leaned forward and eyed Tulan hard. "We've got to get an expedition out there to study things. Will you help?"

There was another of the palpable silences, and when he spoke Tulan's voice sounded unnatural. "I—yes; we'll help. Whatever you want. Is . . . Senneck finished?"

Kliu smiled tightly. "Senneck, for sure; and she may take the rest of us with her. Nobody conceived what this might come to. A lot of those deep materializations produced pockets of dense fissionables, and they're converging toward the center under their own weight. When they get to a certain point, we'll have a fine monument to Man's ingenuity. A planet-size nova." He stood up. "I'll start organizing."

Tulan existed somehow through the preparations, and when they were in space again the solid familiarity of his ship helped. His staff was carrying on wonderfully; shielding him, he suspected, from considerable hostility. Discipline held up.

A technology that had spanned five orbits and probed beyond was at bay, and the expedition was tremendous. Hardly an art or science was unrepresented. If need be, whole ships could be built in space.

A beam from Teyr as they passed told of refugees by the hundreds of thousands, dumped in the wilderness with a few ships still trickling in. Tulan would have traded everything he could command to hear a word of Jezef or the family, but Teyr wasn't concerned with individuals and he didn't ask.

Sennech was dull gray in the telescopes, showing, as they neared, flecks of fire. They went in fast, using her gravity to help them curve into a forced orbit as they strained to decelerate. Thermocouples gave readings close to the boiling point of water; that, probably, was the temperature of the lower air.

Roboscouts went down first, then, as conditions were ascertained, manned ships. Tulan took the flagship down once. Her coolers labored and her searchlights were swallowed in murk within a few feet. Sounds carried through the hull; the howl of great winds and the thumps of explosions. Once a geyser of

glowing lava spattered the ship.

Within hours the picture began to form. The surface was a boiling sea broken only by transient mountain peaks which tumbled down in quakes or were washed away by the incessant hot rain. It would have been hard to find a single trace of the civilization that had flourished scant hours before.

The slower job was learning, by countless readings and painful deduction, what was going on inside the planet. Tulan occupied himself with organizational tasks and clung to what dignity he could. After an eternity Kliu had time for him.

"She'll blow, all right," the scientist said, sinking tiredly into a seat. "Within half a year. Her year."

"Twenty thousand hours," Tulan said automatically. "How about the other planets?"

"Coar has one chance in a hundred, Teyr possibly one in ten."

Tulan had to keep talking. "The outer satellites. We can do a lot in that time."

Kliu shrugged. "A few thousand people, and who knows what will happen to them afterward? It's going to

be a long time before the System's inhabitable again, if ever."

"Ships . . . people can live a long time in ships."

"Not that long."

"There must be something! The power we've got, and this hyperspace thing."

Kliu shook his head. "I can guess what you're thinking; we've been all over it. There's no way to get to the stars, and no way to move a planet out of its orbit. Don't think we haven't been pounding our skulls, but the figures are hopeless."

Tulan stared at the ulcerous image on the screen, built up by infra-red probing through the opaque atmosphere. "She looks ready to fall apart right now. How much of her could you blast off?"

Kliu smiled wearily and without humor. "We've worked that idea to the bone, too. If you could build a big enough projector, and mount it on an infinitely solid base, you could push something deep enough and accurately enough to throw off stuff at escape velocity, but it's a matter of energy and we can't handle one percent of what we'd need. Even if you could generate it fast enough, your conduits would melt under the

current." He got up and walked a few steps, then sat down again. "Ironic, isn't it? All we can do is destroy ourselves."

Tulan's mind couldn't accept it; he was used to thinking that any amount of energy could be handled some way. "There must be something," he repeated, feeling foolish as he said it.

He went over the figures he knew so well; the acceleration and the total energy necessary to drive a ship to the nearest stars. Even a ship's Pulsors, pouring energy out steadily, were pitiful compared to that job. Schoolboys knew the figures; mankind had dreamed for generations . . .

He sat up abruptly. "This hyperspace; didn't you tell me there were such things as velocity and momentum in it?"

Kliu's eyes focussed. "Yes; why?"

"And that a projector could be built to put an entire ship into hyperspace?"

Kliu stared at him for a second. "Kinetic energy! Built up gradually!" He jumped to his feet. "Come on! Let's get to the computers!"

Several hundred hours later Tulan lay watching the pin-

point on his viewscreen that represented Sennech. He'd been building up speed for a long time; he ached from the steady double-gravity. The ship, vastly beefed up, was moving at a good fraction of the speed of light. It wouldn't be much longer.

The cargo of carefully-chosen matter, shifting into hyperspace at the right instant, would be taken deep into Sennech by the momentum he'd accumulated in normal space. If the calculations were right, the resulting blast would knock a chunk completely out of the planet. Each of the thousands of other ships tied to him by robot controls would take its own bite at the right time and place. Providing the plan worked.

The Solar System would have a few hot moments, and would be full of junk for a long time, but the threatening fissionables inside Sennech would be hurled far apart, to dribble away their potency gradually. Kliu admitted no one could calculate for sure even how much, if any, of

Sennech would remain as a planet, but Teyr, at least, with her thick atmosphere, should withstand the rain of debris.

He wondered about his family, and Jezef. Kliu had tried to get word, but the tragically few refugees were scattered.

He smiled, recalling how severely he'd had to order his staff to abandon him. He was proud to remember that much of the fleet would have come along, if he'd let them; but live men were going to be at more of a premium on Teyr than heroic atoms drifting in space. Machines could handle this assault. He himself had not had to touch a single control.

The indicators began to flash, and, sweating with the effort, he hauled himself erect to attention. It was good to be winding up here in his own command room, where he'd lived his moments of triumph. Still, as the red light winked on, he couldn't help thinking how very quiet and lonely it was without Jezef and the staff.

THE END



the Spectroscope

by **S. E. COTTS**

UNEARTHLY NEIGHBORS. *By Chad Oliver. 144 pp. Ballantine Books. Paper: 35¢.*

This fictional investigation of life in another solar system features a somewhat different approach to the problems involved, one that will prove extremely gratifying to those truly interested in man's future. Mr. Oliver does not fall into the traps which this subject can hold for the unwary writer. As an anthropologist himself, he projects a most realistic story. The other race that his hero, Monte Stewart, endeavors to communicate with is not too unlike ours physically. This heightens his frustration when they find themselves unable to really understand each other since the results of his work will be of great importance, this being the first time man has discovered human neighbors in space. The obstacles are finally overcome, but not until years have passed and both sides have been tormented by self-sacrifice, despair, and tragedy.

Though I have emphasized the realistic nature of the author's writing, this is not by any means a dull or unexciting book. There is a good deal of action and a shattering climax. But this outward activity has a counterpart in the mental and psychic changes which occur in the members of Stewart's expedition. This latter achievement is the rarer one in science fiction, and is therefore more to be praised and valued.

SLAVERS OF SPACE. *By John Brunner, 118 pp. Ace Books. Paper: 35¢.*

This novel can be read from many different angles—it is a murder mystery, spy story and science fiction work all rolled into one. It is not equally strong on all levels, but each facet contributes to an agreeable whole. Oddly enough, the S-F aspect of the story is the least important of the three. It provides the setting for the story, but once the reader accepts the existence of robots and androids in a society, the story has all the elements of any classics

thriller, and the hero becomes one with any other hero whose mission is to get to the root of a problem or right a wrong.

Derry Horn, the main character, is a wealthy young man who is extremely dissatisfied with life on Earth at his time. He is pervaded by a sense of uselessness and unrest, and cannot find fulfillment in the pleasures that technology and leisure have made possible. Chance makes him the witness to a murder and he becomes involved in a conspiracy that he cannot fathom. Though he is frightened of the responsibilities that suddenly descend on him, they give his life new meaning. By the time he has endured the trials that await him, he has not only helped the galaxy, but has become a man in the process.

Though not a very deep book, or even a wholly original one, it is nevertheless skillfully done, and most entertaining.

In answer to numerous requests, the space usually taken in reviewing a third book will be devoted to a listing of the names and addresses of the principal science fiction publishers. We hope this will benefit the many readers who have been unable to locate or purchase the books reviewed here through their regular libraries or bookstores. Others will be added as they pop up. In the meantime, this should make a good start. You see, public opinion and public pressure do count for something.

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c/o Ace Books, Inc.
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N. Y. 36, N. Y.

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c/o Ballantine Books, Inc.
101 Fifth Ave.
New York 3, N. Y.

Gold Medal Books
c/o Fawcett Publications, Inc.
Fawcett Place
Greenwich, Conn.

Simon and Schuster, Inc.
Rockefeller Center
630 Fifth Ave.
N. Y. 20, N. Y.

Doubleday & Company, Inc.
Garden City, N. Y.

Avalon Books
c/o Thomas Bouregy and
Company
22 East 60th St.
N. Y. 22, N. Y.

Signet Books
New American Library, Inc.
501 Madison Ave.
N. Y. 22, N. Y.

Avon Books
c/o Avon Publications, Inc.
575 Madison Ave.
N. Y. 22, N. Y.

Harcourt, Brace and Company
750 Third Avenue
N. Y. 17, N. Y.
(Same address for Dell Books)



Or so you say

Dear Editor:

I think that Mr. Nash, in his letter in the March issue, would have made his argument more convincing if he had not unwittingly revealed the true reason for his attitude. He states that he's been reading this magazine for twenty-two years and *now* is annoyed because of the change in it. Well bully for him! I cannot imagine a magazine of any kind, which has been in existence for as long as *Amazing* not going through some kind of change. New factors have entered into this field; cost of paper and other materials has risen, and even reader interest has changed.

The *Amazing* of twenty years ago was edited for a particular audience. Wasn't it? Ray Palmer knew what the readers wanted, and he usually supplied them with it. Today the readership has changed. Does Mr. Nash actually think that every one of the readers of *Amazing* who read it a decade ago, faithfully buy it now? Tastes in reading can change you know, as well as there being other unforeseen things.

The change from pulp to di-

gest size and from ragged to trimmed edges was due to necessity as well as readers' demand. I think most people can see how a digest size magazine is much more easy to carry and has a better chance of being prominently displayed in a newsstand, rather than being buried flat on a pile. And costs too have zoomed. I'll be willing to wager that you no longer could put out 275 page *Amazings*, like those in the early forties, for 25¢ each. Publishing economics could not support a venture like this.

As for the Shaver mystery, well, Palmer latched on to that strictly as a gamble, and there were plenty of people who *did* believe in the whole thing. Shaver increased the circulation quite a bit. There was even a Special Shaver mystery magazine put out in '47 featuring material by him. Now would Palmer have done this if he believed that every reader of *Amazing* was against it, and considered the Mystery nothing but outright tripe? I'm sure that even Palmer would have enough sense to realize what a foolish move that would be.

The main theme of all science fiction is extrapolation, with prophecy thrown in for good measure. Whether the story takes place in the future, the present, or the past, you will always find some new concept or idea introduced. I doubt if any magazine will assume an I-told-you-so-attitude towards the readers, when referring to present day events, in order to cast favorability in itself. Science fiction *has* to predict, Mr. Nash, new ideas and thoughts introduced have to have some minute basis in fact. There always exists the possibility that what may be pure science fiction in a magazine one day, can easily prove to be fact. Take spaceships and interplanetary travel. You only have to glance at a few headlines to see how we stand there. On the other hand, time-travel has formed the basis of stories numerous times, and yet there is no *definitive* proof that it occurs. This is a chance every writer takes. It's also possible to dream up something *too* fantastic, you know.

Whether *Amazing* undergoes a complete metamorphosis twenty years from today is absolutely of no concern to me. Neither, am I going to sit back and classify each story, and wait half-a-century to see whether it ever takes place. There's no reason to engage in such folly, or even hint that you are. Certainly *Amazing* of today will never be comparable to the *Amazing* of twenty years ago—

but tell me, is that good or bad?

Incidentally, I apologize to Jack Sharkey for doubting his existence. A friend sent me a clipping from a writer's magazine which had an interview, and even a picture of Sharkey. So he is not a nom-de-plume as I first assumed, but as real as any of us. And knowing that he is real, I can enjoy his stories more, since I'm not forever saying to myself: "Well, this was probably written by . . ."

Mike Deckinger
85 Locust Ave.
Millburn, N. J.

● *Ever wonder what Sharkey will look like twenty years from now? Ragged edges, probably.*

Dear Editor:

Yesterday I happened to be looking through those past issues of *Amazing* that I used to buy just off and on and mentioned last letter (along with praises) and I came across an item I'd almost forgotten. I am referring to the letter of one Wm. N. Beard in the August '58 issues of *Amazing*, when P.W.F. was still editor. At that time Mr. Beard commented to your beloved forerunner that if the so-called novels were three times as long as they were, then they could really be called novels. Mr. Fairman in reply said that every novel published had run over 40,000 words except "Today Is Forever," which was slightly less. However, the very issue in which the letter appeared con-

tained Vance's "Parapsyche," a novel of only 36,000 words. "The Planet Savers" in the November issue of the same year was only 27,000 words.

Of course, I thought that with the changing of editors this, too would change, and that the novels would really be novels. But . . . "Long Ago, Far Away" (September '59) was only 34,000 words. "Sound of the Scythe" was only 29,000 words, "Sneak Preview" was 38,000 words. "Star Surgeon" was 35,000 words and so on.

This is a change? Please, like Mr. Beard said, let's do things honestly! A novel is a novel, but the lengths you've been publishing are either "short novels" or, as other magazines call them, novellas. And don't ask me where I got my figures—I just spent the whole day counting words.

Now to comment on the March issue of my favorite magazine. Marion Zimmer Bradley's "Seven from the Stars" was just about the best bit of story telling I've seen from this author. I'm glad it was at least a little longer than "The Planet Savers." I also enjoyed the author's "Conquering Hero" in the October '59 issue of *Fantastic*.

"Subterfuge" was good, but then Silverberg always is. How about another novel from him. I thoroughly enjoyed his "Collision Course!" of last July.

And, oh, that Sharkey! I'm still trying to figure out that little puzzle of his. But I guess

I'm lucky, though, for I haven't turned into an alligator, as yet. What about a novel from him, too?

Nuts to Nuetzell's cover. For some reason it just didn't strike me as well as his first two. Why not get Wood or Emsh to do a few of your covers? Also, why not have Finlay do more illos than just the one for your novels?

All in all, the rest of the issue was excellent. A few more like that (and a few other changes for the better) and you'll get me to subscribe yet!

B. Joseph Fekete, Jr.

212 Cooley Road

RFD#2

Grafton, Ohio

● *All right, we'll try to make the novels longer. But it will mean fewer shorts. Then you'll complain about that!*

Dear Editor:

"It's A Good Trick If . . ." by Kate Wilhelm was undoubtedly one of the sickest stories you have ever published. *It just didn't have it.* Matter of fact, it didn't have anything. One of the things which really surprised me was Ward Moore's novel, "Transient." Since his "Bring the Jubilee" a lot of his stuff has been pretty bad. Especially his novel in a couple issues of *Science Fiction*. This one was good. The rest of the issue was mediocre. Varying from fair to poor. Lastly being Wilhelm's bit—which was lousy.

The editorial is, to me, vaguely depressing. It's so short and so meaningless—look at Bob Lowndes' editorial in *Science Fiction*. Dry though they be, they *are* worth reading. Mr. Lobsenz' editorials aren't worth the paper it takes to print them. Cotts' column isn't much better. As Mike Deckinger says, there is some sort of a pun connected with it—the name that is. I haven't figured it out yet . . .

Even Valigursky's cover wasn't bad. I liked that Unicorn. I think that you should give up on the others and give the cover back to real *artists*. Like Emsh, Finlay, (whose interiors are good) Freas . . . anyone but Summers and Valigursky all the time. And either expand the letter column or drop it altogether. The letters are dry, uneven, dull, uninteresting, generally not worth publishing—and you cut them so much.

That classified section is a farce, as is most of the magazine.

Paul Shingleton, Jr.
320—26th St.
Dunbar, W. Va.

● *So why do you keep buying it?*

Dear Editor:

Off and on since January of 1957 I have been buying copies of both *Amazing Stories* and *Fantastic*. During that time I have seen many changes, some of them good and others not. I liked the Space Club and was

sorry to see it go. I liked the fan departments. I also liked Hal Ellison's short stories and was very disappointed at not seeing his name on the contents page for so long.

These were the good things in the "old" *Amazing*, but there was also some bad. Many of the stories were poor, in every way: story idea, plot, writing, and other things. And the covers were also poor, both as far as art and theme. Not infrequently they would offer something to the reader which was never delivered once he found himself inside the magazine.

Time went on, however, and with its passing came the changes that I mentioned. A new editor, a new policy, better stories and covers, then came the monthly novels, at the expense of dropping a few features, for which, as I have said, I was very sorry. But the novels were good and I liked them, so after awhile I got used to the absence of these other things.

Then suddenly there was again a new editor. He kept the novels, of course, but his policy was fresh and new so the magazine became even better yet. But the most welcomed change, to me, was the covers. Never had I seen more beautiful work on any magazine front before. I was so pleased that I began buying the magazine not off and on but, instead, every single issue.

And then I made the fatal mistake of writing to this new-

...OR SO YOU SAY

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est editor (name withheld in order to protect the in-or-cent) and making a suggestion that he re-establish some of the fan-slanted departments which, to my way of thinking, would further this change from merely very good to excellent. But what did I get for my loyalty and interest? Well, when the letter I sent him was printed in the January issue of *Amazing*, he stated, and I quote: "Instead of talking about fans, we prefer them to talk about us—and, we hope, as favorably as you do." Unquote.

Well, Mr. Editor, your preference is being seen to. I am still loyal and still talking as favorably as ever. So return to favor, please, and take note . . .

Brown got me interested, Fairman got me buying off and on, and you finally hooked me steadily. Now, perhaps, you would like me to subscribe? Well . . . couldn't you please see what others have to say about the return of fan departments first, before you just say no again, and not play the politician bit (in reference to your comment in the February issue of *Fantastic*) if they do decide in the affirmative? I've got my \$3.50 ready, and it's a bargain at that price . . .

But so much for that.

Back to the covers . . . the best cover since July, I think, was Summers bit for November. The next best was the January cover illustrating "The Night of the Long Knives." Running a

close second with the above was the one for "Star Surgeon," and then the February cover.

The interior illustrations, of which there have been very few, are usually fair. But the ones Finlay has been doing for the novels are excellent. Why can't he produce work like that on his covers?

Your novels, so far, have been very good. Leinster's "Long Ago, Far Away" and Nourse's "Star Surgeon," I think, were the best. In second place is Bloch's "Sneak Preview"; third is Biggle's "Taste of Fire" and Leibler's "Night of the Long Knives"; fourth, though still very good, Moore's "Transient."

All in all, as I said in my first letter and also in this one, *Amazing* and *Fantastic* are two of the best magazines on the stands today. Keep up the good work, and I'll never have to stop buying steadily. I might really even subscribe if. . . .

B. Joseph Fekete, Jr.
212 Cooley Road,
R.F.D. #2
Grafton, Ohio

● *We certainly appreciate such a thorough critique of the magazines, and are glad you think they're improved. We think so too. As for fan departments, we'll think it over again. But don't raise your hopes too high.*

Dear Editor:

I have a syllogism for you:

a. The customer is always right.

b. I am a customer.

The answer should be obvious even to one of your low standard of intelligence.

It has been said that you cannot please all the people all of the time. This, in your case, is incorrect. You have two magazines. With one you can please half of the people all of the time and with the other you can please the remaining half all of the time. If you please both halves all of the time, aren't you pleasing all of the people all of the time?

There seem to be two halves to your readership. One half wants all science fiction in your magazines, the other wants no sf at all. The solution to this problem is simple. Keep all the fantasy in *Fantastic* and all the sf in *Amazing*.

Oh yeah, I know good fantasy is hard to find. Then what is your excuse for the appearance of "Knights of the Dark Tower," a fantastic story in *Amazing*? Good fantasy isn't half as hard to find as you think it is. How do you think Palmer got old established writers like Burroughs to write for him? Just by sitting around and wishing they'd send him a novel? No, Palmer had gumption enough to write and solicit stories when he wanted them. Look at his circulation.

There are dozens of good fantasy writers around. For example take the L. Sprague deCamp 'Bjorn Nyberg' sequels to the *Conan* stories so popular in the

old *Weird Tales*. Then what about C. S. Lewis? He has been writing mostly sf recently, but he once did a fantasy series for children, and I have noticed that Mr. Lewis has great admiration for J. R. R. Tolkien's "Lord of the Rings" which was also developed from a children's story. What about Fletcher Pratt, who wrote the excellent "Well of the Unicorn," and, in collaboration with L. Sprague deCamp, "The Castle of Iron."

Another thing. Sure, good fantasy is hard to find. In order to fill up an issue of *Fantastic*, you use about ten shorts. To fill up an issue of *Amazing*, you have about four shorts and a full-length novel. Do the same with *Fantastic*. You don't need to put in a half-dozen short stories that don't belong in here, being sf, all you have to do is get a full-length novel for *Fantastic*.

Yeah, I know what you're thinking. "Doesn't that nitwit know I have enough trouble getting short stories for *Fantastic* without trying to get a novel, too!" Go tell it to deCamp and Nyberg—and while you're telling them, wave a couple of greenbacks under their noses. If you can get two writers as excellent as these, never mind if you have to pay a little extra. *Conan* has gained in popularity through the years. Sales will make it up.

Another thing is those covers of yours. The best one you've had so far is the one on the June '59 issue. The one for next

month, March, looks good, though.

Now we have entered a new decade, we can expect a great shift in the trend of literature, a shift toward the old romantic tradition. If *Amazing* and *Fantastic* recognizes this change, they will lead the field in the Soaring Sixties.

Paul Zimmer

RD 1

East Greenbush, N. Y.

• *I have a syllogism for you. A: Editors are always being attacked by readers. B: I am an editor. The answer should be obvious.*

Dear Editor:

I have been a reader of *Amazing* for one whole year and I just simply love it. Well, I'm not that enthusiastic about it, but it is about the best magazine on the stands today, and after reading it for one year I feel I should tell you what needs to be done. Prepare yourselves:

1. In the last few issues, I noticed, you have been using oversize print on some of the stories. What's the matter, can't find enough stories! A solution to this one coming up.

2. How about a regular science or fact article in each issue?

3. Why don't you follow the suggestions of some of your readers: more reviews, more letters, fanzine reviews, etc.? Hike the price up to 50¢, add some more pages, and put these things

in. Anybody would be glad to pay an extra 15¢ for a magazine of better quality and length. (Well, better qualify that, almost anybody.)

4. Also, I think I'm going to strangle with a steady diet of short stories and complete novels. How about some novelettes with the aforementioned. If you had a bigger magazine, you could fit in a novelette, a complete novel, and short stories. While I'm on the subject of novelets, how about another story by Keith Laumer who wrote the novelet, "Greyloren" which appeared in the April '59 issue of *Amazing*.

5. Although my tastes in science-fiction differ from others, I am sure most everyone will agree with me on my opinion of Ward Moore's novel, "Transient"—it stinks. This is one of the reasons, probably, why I notice *Amazing* sits on the stands until the next issue comes out. Why publish stuff like this in a science-fiction magazine? If you're going to publish that stuff why not change the name to *Amazing Fantasy Stories*. Here is one customer you'll lose.

Scott Neilsen

731 Brookridge Dr.

Webster Groves 19, Mo.

• *What's a matter? Run out of ideas already?*

Dear Editor:

Mere words cannot begin to describe what I thought of your March edition of *Amazing*. But

someone has to try, so why shouldn't I?

"Subterfuge" by Robert Silverberg, to me, represented just how blind to fact a man can get. The missionary really knew he had been converted to the ways he had been trying to convert the true converters away from, but still he persisted in saying that he had not been converted. It was a good story, too.

Jack Sharkey's "Old Friends Are the Best" was excellent—a real treat to the realm of good old s-f. There is nothing I like more than to read about how my friends, the aliens, make fools of the human race—and even better, lay them in ruin or even extinction.

Your cover, although a would-be treat for almost any other magazine, I did not think it was quite up to par; but no one can expect perfection—even from *Amazing*. I did not see the cover, in any way whatsoever, was even symbolic of M. Z. Bradley's interesting and well-written novel. If that huge bulk of a spaceship was supposed to be the small life ship the "Seven from the Stars" arrived in, then somebody must be slipping; and why were there eight space suited figures? And, in the final analysis, why space suited at all?

Bob Adolfsen
9 Prospect Avenue
Sea Cliff, N. Y.

Will you please stop asking embarrassing questions and just

stick to talking about how great we are? How's that for an easy out!

Dear Editor:

In the February 1960 issue, the writer found fascinating the story "Transient."

I wonder how many of your readers realized that this story is written in an allegorical code and deals mainly through allegories with the ancient sex evolution of the human race. It must have been written by a deep biblical student because many of the allegories are somewhat similar.

The beginning refers to entering through the teeth (straight back chairs; scum crusty inkwell) salivary glands, the many doors open (brain) etc.

Like the book of Jeremiah in the Old Testament where the world (Babylon) is the human body and allegories explain medical lore this book tells in space travel terms (many anciently valid) of a tour through the human body.

N. C.
385 Bank St.
New London, Conn.

● *You don't say!*

Dear Editor:

I have never written a letter to a science-fiction magazine before, but when I read Jess Nash's letter in the March *Amazing*, I felt I had to write and put in my two cents.

Mr. Nash, I am one of those readers who has been with *Amazing* "two whole years" as you put it. But considering my backlog of them (obtained from used magazine stores) I go back about ten years. I'll concede that *Amazing* has slipped a little, but not as much as you suggest. Just because a person has discovered science-fiction late doesn't mean you have the right to insinuate he's feeble-minded. As Shakespeare said in *Julius Caesar*, "I pause for a reply."

If anyone wants to correspond with me, I'm probably the loneliest fan in the state of New Jersey.

Lenny Kaye
418 Hobart Rd.
Sutton Terrace
North Brunswick, N. J.

● *Not any more, you won't be.*

Dear Editor:

The feature story in March *Amazing*, "Seven from the Stars" was one of the best I've come across in a long time. In

the past I've kept to the pocket book s-f as I felt a publication such as yours didn't have much to offer. I must apologize for this. And thank a friend of mine who gave me the latest issue.

I also read your "Or So You Say" column and thought it, too, most interesting. I quite agree with Mr. B. Adolfsen; my enthusiasm is as great as his, but not to the point of enclosing an extra 35¢. I'll save it to buy your next issue.

I've always gone along with the theory that the sf of today will be the fact of a few years from now, as so with Jules Verne and others.

Who knows, it could very possibly be a true experience that M. Z. Bradley wrote about. After all, what is the limitation to an author's imagination? Where do his ideas come from? Anything can be possible.

A. D. Scofield
780 Dalton Blvd.
Port Charlotte, Fla.

● *What do you mean "possible"?*



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